RESTRICTED
UNCLASSIFIED

GERMAN MILITARY NEUROPSYCHIATRY AND NEUROSURGERY

UNCLASSIFIED
RESTRICTED

COMBINED INTELLIGENCE OBJECTIVES

SUB-COMMITTEE

GERMAN MILITARY NEUROPSYCHIATRY AND NEUROSURGERY .

Reported by

LEO ALEXANDER, Major, MC, AUS

CIOS Item 24
Medical

Allied Forces. Supreme Headquarters.
Combined Intelligence Objectives Sub-Committee G-2
SHAEF (Rear) APO 413.

TABLE OF CONTENTS

A. Neuropsychiatry in the German Army

1. Regulations, memoranda, circular letters and reports governing neuropsychiatric practice in the German Army

These sources of information were placed at my disposal for study by Oberstabsarzt Dr. L. Hochapfel, formerly assistant to the chief consulting psychiatrist at the Militärärztliche Akademie in Berlin (now chief of the neuropsychiatric section at the military Hospital in Tutzing, Bavaria), Stabsarzt Dr. Eduard Beck, his assistant, Oberfeldarzt Dr. H. Spatz and Dr. F. Jehnel of Munich, and by Generalstabsarzt Dr. W. Tönnis in Bad Ischl. These documents included a great number which were marked secret ("Geheim") or restricted ("Nur für den Dienstgebrauch").

Medical diagnosis and disposition in the German Army were governed by Regulation HDv 252/4, MDv 248/4 LDv 399/4 (comparable to our MR 1 - 9), of 1-4-1944, which took the place of the similar older 53 d/62, which was last amended on 12-8-1942. This regulation (Appendix 1, No. 1) utilizes a scheme similar to our profiling system. Dispositions are arranged horizontally, diagnoses according to organ systems vertically. Dispositions are designated by capital letters: A and B are categories fit for combat duty (kriegsverwendungsfähig=k.v.); Z indicates temporarily unfit for duty (zeitlich untauglich=z.u.); L indicates limited service (bedingt kriegsverwendungsfähig=bed.k.v.); U indicates fit for laboring duty only (arbeitsverwendungsfähig=a.v.); and vU indicates permanently unfit for duty (wehruntauglich=w.u.). The diseases of the nervous system (apart from epilepsy and the organic diseases of the brain) are listed as Nr 15, with 3 subgroups in the various duty categories. For instance, "psychically inadequate psychasthenics and neuropaths" (which includes those falling under our concept of hysteria) are classified as L-15-1; characteropaths (psychopaths with emotional instability and character defects) as A-15-3; the combat exhaustion states, temporarily, as Z-15-1. It was common practice, however, not to classify psychosomatic disorders without overt psychic symptoms under No. 15, but under the respective organ systems, such as 49 for heart, 52 for stomach, and so forth. Even bed wetting was classified under the heading of bladder and kidney, namely as B or L-54-1.

The general procedure for diagnosis, treatment and disposition of neuropsychiatric conditions which we classify as psychoneurosis or psychopathy respectively, is contained in the "Directives for the appraisal of soldiers

with psychic-nervous deviations (Psychopaths) and with psychic-nervous reactions, and directives for their transfer into special formations" (Appendix 1, No. 2) In its "general section" this directive states that the first diagnostic step should be the distinction of the abnormal reactions which occur as a consequence of excessive stress and fatigue, from those which occur as a consequence of psychopathic constitution. It is to be realized that a diminished resistance to such reactions exists among the youngest as well as among the oldest age groups, which is not to be taken as an expression of psychopathic constitution, but is due rather to immaturity in the young, and worn-out-ness and staleness in the old. The young, following breakdown, are to be re-integrated gradually into combat duty; the old, after breakdown, are to be transferred to the rear and used within the limits of their capacities. In the middle age groups, however, constitutional deviation is the largest single cause of breakdown. It is stated, especially for the attention of regimental and battalion surgeons, that snap judgment of a moralizing kind should be avoided, because, apart from the malevolent ("Schlecht-willige"), a great many patients of fundamentally good will ("Gutwillige") will be found among these patients. Furthermore, it is directed that such terms as "Neurosis", "Psychopathy", "Psychopathic reaction", etc., are to be avoided, and are to be replaced by more descriptive terms, as given in the special section of the directive, or by brief descriptions of the personality of the patient. In addition, the directive stresses the importance of careful search for organic illnesses: "Soldiers, who for instance complain about disturbances of the stomach, intestines, circulation or bladder, belong to the internists. The neuropsychiatrist must be consulted only when deemed necessary by them."

The treatment of psychogenic reactions should be as early as possible. The mildest types of reaction disappear quickly under comradely encouragement. Surgeons and internists with troops and in hospitals should be aware of psychogenic overlays in their patients and should call a neuropsychiatrist in consultation, especially if protective postures and contractures persist longer than usual after palsies and gunshot wounds of the peripheral nerves. Frequently the transfer of such psychogenic cases to locked psychiatric wards, and their placement amid severely organically ill patients on such wards, is helpful therapeutically with patients on whom simple psychotherapy had no effect. No patient suffering from psychogenic and hysteric symptoms should ever be evacuated to the rear without the approval of the chief consulting psychiatrist. In the Zone of the Interior, all patients with hysteric disturbances

are never to be discharged as unfit for military service, but are to be transferred to special therapeutic hospitals for electric treatment. If they are freed from their symptoms, they are to be reassigned to limited duty according to the limitations of their personality or of associated organic defects. Those who remain resistant to therapy, are to be transferred to the military sections of the State Hospitals for the Insane.

The special section of this directive gives clear cut categories of diagnosis, treatment and disposition, which will be summarized in abbreviated form, with reference to the corresponding diagnostic categories used by our Army.

Diagnosis	Treatment and Disposition
I. Soldiers with good physique and with good previous personality, but with abnormal reactions (anxiety, confusion, trembling, functional palsies) in response to catastrophic events or exhaustion (our LD-yes type of Psychoneurosis, stress severe, predisposition none)	If comradely or medical encouragement does not help, field hospital. There ample nourishment, and sedatives. After 8 days, light work and military training. Then, after brief period of light duty or convalescent center, return to combat. If hysteric fixation persists in spite of this treatment, further treatment like group II c.
II. Abnormal personalities with purely psychic deviations.	
a. Deviant characters, such as instability, abnormal desire for recognition, swindlers, asocials and antisocials (our "constitutional psychopathic state with emotional instability", and it's variants "with pathological lying", etc.)	Purely disciplinary disposition to special and punishment formations. In the Zone of the Interior, to "Sonderabteilung des Ersatzheeres". At the front or near the front, to "Feldsonderbataillon". If these measures unsuccessful in improving performance, transfer into a concentration camp.
b. Weak people (psychasthenics), such as the hesitant, irresolute, helpless and anxious. (our "constitutional psychopathic state with inadequate personality")	Comradely encouragement. If insufficient, transfer to reserve units or other suitable units, except to those engaged in construction work.

Diagnosis	Treatment and Disposition
c. Soldiers with tendency to prolonged fixed abnormal reactions ("hysterics") such as those with coarse tremors, fits, functional palsies, aphonia, hysteric deafness etc., usually in response to wishes, desires, or needs, frequently produced as a result of hospital treatment in the rear areas. (Our categories of "psychoneurosis, hysteria, due to mild stress, predisposition moderate or severe", or of "Constitutional psychopathic state with inadequate personality and with recourse to hysteric conversion symptoms").	Treatment in the Neuropsychiatric Section of a military hospital, preferably in a forward area and on the same ward with severe organically ill patients, by means of suggestion, hypnosis, or strong galvanic current. If treatment unsuccessful, transfer to the military section of a State Hospital for the Insane, preferably in occupied territory or close to the borders in Germany. They are never to be transferred to a hospital near their home, or to be discharged as unfit for duty, until their symptoms have completely disappeared. After relief from their symptoms, they should be tried, if necessary repeatedly, in their previous assignment; if they relapse repeatedly, they should be returned to the military section of a State Hospital for the Insane.
III. Personalities with mixed psychic and physical anomalies.	
a. Soldiers with physical constitutional defects, underdevelopment, maldevelopment or infantilisms. (Our concept of immaturity, with or without associated constitutional psychopathic traits of the inadequate type).	Limited Duty.
b. The constitutionally labile with tendency to functional disorders of specific organ systems (vasomotor or vegetative instability, with tendency to fits, disorders of consciousness, or tetanoid symptoms after effort, etc.) (Our Neurocirculatory Asthenia, effort syndrome, vasovagal syncope, etc.)	Treatment with Bellergal, and luminal as stabilizers, metrazol and glucose as stimulants. Then limited duty according to capabilities.

Diagnosis	Treatment and Disposition
c. Soldiers of the older age groups with involutional, presclerotic or presenile symptoms, such as high blood pressure, irritability, forgetfulness, diminished efficiency.	Treatment with iodine in the form of iodine-calcium-diuretine, then limited service according to capabilities.

The transfer of psychopaths of the "malevolent" type to special or punishment-formations is governed by this and other directives (HDv 209) (Appendix 1, No. 3). Such soldiers, while still in basic training, are to be transferred to the "Sonderabteilungen des Ersatzheeres" (special formations of the army in the Zone of the Interior). These formations have the character of special training formations for soldiers with difficulties of behavior and discipline. If soldiers do not respond favorably to this special training due to malevolence, or if such behavior difficulties manifest themselves in soldiers who have already had their basic training, they are to be transferred to "special field battalions" ("Feldsonderbataillone"). These formations have the character of punishment-formations. If soldiers transferred to them fail here also, they are to be transferred to a concentration camp. It is specifically stated that soldiers of all categories of fitness, with the exception of epileptics and the feeble-minded, can be transferred to the "special formations" or the "special field battalions".

Special regulations concerning the treatment of patients suffering from psychoses or from neurosyphilis (Appendix 1, Nos. 4 and 5), prohibit shock treatments or malaria treatment at military hospitals, except the administration of a small number of metrazol shocks given to facilitate evacuation of patients from hospitals in forward areas. All definitive treatment of this type is to be carried out at civilian mental hospitals, after transfer of the patients to such institutions. The practice of provocation of epileptic seizures in epilepsy suspects, such as by means of hydration and other methods, is likewise ordered discontinued in military hospitals.

A special memorandum (Appendix 1, No. 6) gives directives for the differential diagnosis of convulsive disorders, such as epilepsy, focal attacks, vasomotor attacks, tetanic attacks, narcoleptic attacks, and psychogenic fits.

Three regulations concerning alcoholism and drug addiction are of interest. A special order by General von Brauchitsch of 31-5-40 (Appendix 1, No. 7) prohibits the creation of a social atmosphere which encourages or forces younger officers to develop the drinking habit. A second point he makes is of interest: while it is important that a superior officer insists on the subordination of an enlisted man even if the enlisted man is drunk, he should nevertheless try to avoid any direct contact with the intoxicated enlisted man, but should try to arrange it so that all the direct handling is done by other enlisted men. If personal action of the superior officer is unavoidable, it should be done as quietly and comradely as possible. Drunkenness should always, in principle, be punished by disciplinary action. A special order by General Göring, of 20-3-1939 (Appendix 1, No. 8) prohibits the installation of bars in officers' and enlisted men's clubs in the Luftwaffe. A special regulation (Appendix 1, No. 9) states that once a member of the armed forces has been courtmartialed for addiction to alcohol or narcotics, dismissal from the service or dishonorable discharge become mandatory; it is therefore directed that the medical court experts always recommend treatment in a State Hospital for the Insane, in preference to conviction.

German military law concerning criminal responsibility is wider than ours, in that it recognizes not only states of presence or of absence of responsibility, but also states of reduction of responsibility, which call for reduction of punishment (Appendix 1, No. 10). The paragraph concerning irresponsibility (No. 51) reads: (1) a punishable crime has not been committed, if the perpetrator, at the time of the act, and because of disturbance of consciousness, mental disease or mental defect, was unable to know the difference between right and wrong in specific reference to the act, or if he was unable to act according to such insight. (2) If the capacity to know the difference between right and wrong in specific reference to the act or the ability to act according to such insight, was, at the time of the act, significantly diminished due to the above reasons, the punishment can be mitigated to such an extent as to equal the punishment prescribed for the mere attempt of the crime committed.

In regard to the above "paragraph 51, section 1" it is specifically stated, that irresponsibility can be found not only in cases of mental disease or mental defect, but also in cases of disturbance of mentality due to "exceptional states", such as twilight states, pathologic intoxication, "senseless intoxication", "full intoxication",

in severe drowsiness from sleep, and in psychogenic fugues. However, it is ordered that even a soldier of otherwise good character, once he has been found irresponsible due to severe intoxication or due to a confusional state incidental to exhaustion or overfatigue, can never be returned to his own outfit, but must be transferred. In cases in need of re-education this transfer should be to a "Sonderabteilung". As to section 2 of paragraph 51, it is emphasized that diminution of responsibility has to be significant, and that the corresponding reduction of punishment is not mandatory, but at the discretion of the Court. While in principle psychopaths were not to benefit from this regulation, it is pointed out that certain psychopathic states do have the "validity of a disease" ("Krankheitswert"), especially psychopathies of schizoid, cyclothymic, and paranoid type, and the compulsive-obsessional states. It is pointed out that in those cases where the Court feels that the state of drunkenness has been produced deliberately, the excuse of severe or pathologic intoxication becomes invalid; and that the court can punish a man even if he has merely "carelessly" produced a state of reduced responsibility by drinking, with prison up to 2 years, but never in excess of the punishment for the crime committed during his state of intoxication. An excuse of alcoholic impairment of responsibility can never be brought in any crime against military subordination, or for any offense committed while on duty.

Of special interest are the regulations concerning homosexuals. (Appendix 1, Nos. 11-19). Homosexual acts, in the German Army, always constituted a crime for which court action was mandatory; the offenders could not be handled by medical or administrative disposition. Up to 1943, the accepted procedure was for the courts to find out, usually with the aid of a psychiatric expert, whether the culprits belonged to one of the following two groups: (1) Those in whom homosexual inclination is deeply rooted, and whose drive in the direction of homosexuality is apparently incorrigible; (2) those who are basically sexually normal but who have either been seduced or who have deviated because of general sexual over-stimulation. For the cases grouped under class (1), punishment by prison terms was mandatory especially where the crime of homosexuality was combined with abuse of disciplinary authority. Those falling into class (2), as well as officers reduced to enlisted rank because of a homosexual offense, could be punished by prison terms within a military prison, but after serving the term were given an opportunity to return to the ranks with a chance to "redeem themselves before the enemy". The differentiation

of these two groups had to be made on the individual merits of the case and not on principle. Cases in which superiors abused their authority over subordinates had to be considered in a particularly serious light, and experts were especially warned against considering the fact that an act had been committed under the influence of alcohol as necessarily indicative of the fact that such individuals belonged to group (2). This relatively lenient way of handling things, especially the opportunity for homosexuals to redeem themselves by participation in dangerous combat missions, was severely criticised by higher party authorities, especially by the S.S. and Hitler himself, because in the S. S. the death penalty was mandatory for all offenses of a homosexual nature. Finally, in August 1942, Hitler hiself, on the occasion of a request for remission of part of the sentence of a man condemned because of homosexuality for the purpose of giving him the opportunity to redeem himself before the enemy (group (2) type of case), expressed his opinion that such practice was wrong in principle, that homosexuality was always the result of inclination and that no one who had been convicted of it, even though he was fully intoxicated at the time of the act, should ever be allowed to redeem himself before the enemy, but should serve his full prison term and should then be dismissed from the army. This and preceding criticisms of the way the army handled the homosexual problem, led to extensive surveys in which the army authorities requested the opinion of legal authorities, of the Gestapo, of the criminal police, the Chief Consulting Psychiatrist of the army, the Party, the S. S. and of the S. S. Courts. The result of this survey of 12 August 1941 (Appendix 1, No. 12), is of great interest. The Ministry of Justice gave the opinion that any homosexual activity of adult persons always indicates a deeply rooted inclination; that such persons always constituted a danger for their environment, and that any remissions of sentence or pardons should not be granted except for offenders who were still in the age group of puberty and therefore the only ones who could be considered rehabilitable.

The Gestapo considered that the differentiation between homosexuality motivated by deeply rooted inclination and those who aberred or were seduced only once could be maintained. Those motivated by deeply rooted inclination are to be regarded as incorrigible. Those only once deviated or seduced, however, could possibly be rehabilitated. The Gestapo, on the basis of an intimate knowledge of the living habits of practically the entire German population, estimated the number of practicing homosexuals motivated by deeply rooted inclination in Germany as 4,000,000; this

figure also included the "immediate borderline group", which more likely belongs to group (1) than to group (2). (This is a remarkably high figure considering the male population of Germany numbered 44,000,000, and that about half of them are either too young or too old to be interested in sexual activity. This would make almost every fifth man in Germany a homosexual.)

The criminal police advocated a differentiation between environmentally conditioned cases of homosexuality and those caused by deeply rooted inclination. They handled the problem in the following manner: those apprehended at the first offense were specially watched over. After repeated convictions or if it became known that they seduced others, preventive police custody, usually in a concentration camp, was ordered. Thus there was an accumulation of homosexuals in concentration camps. Oberstabsarzt Professor Dr. Göring in the Reichsluftfahrtministerium was interested in the psychological therapeutic rehabilitation of such people and had reported a certain amount of success. According to the criminal police, the exclusion of homosexuals from the army was not desirable. On the contrary, the criminal police made a practice of releasing homosexuals from protective custody and from concentration camps to the army for active combat duty. From a criminalistic point of view this was not considered a danger except in the case of recidivist offenders, and of those homosexuals who committed offenses in a promiscuous manner with a number of different people. However, the criminal police took the view that if the army would start discharging people after they served their sentence, the Army itself would have to take them into protective custody since there was hardly enough room available in police and concentration camps, and the army would have to consider keeping them in their own prisons.

The Chief Consultant in Psychiatry to the army, took the view that any act of homosexuality, even in a state of complete intoxication, almost always pointed with certainty to deeply rooted homosexual inclination. Only such acts as were committed during the time of puberty could be considered differently. An adult man of normal sexual inclination could not possibly deviate even in case of severe alcoholic intoxication. From the military psychological point of view, the Consultant warned against the discharge of homosexuals from the army after expiration of their sentence. He stated that in a number of irresponsible persons this would be an incentive to homosexuality for the purpose of being discharged from the army after a brief prison term.

The Party took the view that any Party member who committed acts of homosexuality, whether on the basis of deeply rooted inclination or not, was to be discharged from the Party on principle.

The S.S. and the S.S. courts stated that they punished all acts of homosexuality occurring within their jurisdiction by death.

On the basis of these and other surveys, Professor Wuth, the Chief Neuropsychiatry Consultant to the Surgeon General of the Army, made two reports, one to the Surgeon General of the Army and the other to the Judge Advocate General of the German Army. The report to the Surgeon General (Appendix 1, No. 13), stated that there is no proof for the heredity of sexual abnormality, but that it develops usually under the influence of unfavorable sexual experiences on the basis of psychopathic constitution. Every man is originally bi-sexual, and first of all occupies himself physically with his own self. During puberty, the sexual drive is not understood in terms of a drive toward propagation, and satisfaction is obtained by masturbation. Also, mutual masturbation during puberty is still to be regarded as normal, although it is a dangerous game which may lead to actual sexual deviation in puberty. With increasing maturity, the sexual drive in the normal individual is directed into normal channels, but in sexual deviants it may be diverted into the wrong channel under the influences of unfavorable sexual experiences, because such deviants are essentially psychopathic personalities with a general uncertainty of instinctual drives. The differentiation of those "due to inclination" and "due to external factors" is wrong. It should rather be "predominantly caused by inclination" or "predominantly caused by external factors". Thus, inclination as well as seduction play a coordinated role. Both should be combatted. As to the whole problem of inclination, it should be emphasized that inclination never produces an "inescapable fate", but can be considered only as a "threatening fate". Inclination never fully abolishes the free exercise of the will. While the adult homosexual should not be held responsible for the fact that he has the inclination to homosexuality, he is fully responsible for the fact that he indulges in homosexuality. Furthermore, it is felt that a general sexual overexcitability is frequently mistaken for homosexual inclination, simply because it happened to fall into the homosexual pattern in that instance. The important thing is to realize that these people are rarely true homosexuals, but rather psychopaths with general instinctual uncertainty who also deviate in numerous other

respects in the forms of dishonesty, alcoholism, suicide, etc. This becomes quite obvious if one looks at the criminal record of the homosexual. 84% of all homosexuals have a record of punishment for crimes other than homosexuality. The conviction for the first homosexual offense usually occurs after the 30th year of life, although the first homosexual act is usually committed between the 18th and 21st year of life. 21% of all homosexuals have previous convictions for homosexuality, 35% have been tried for homosexuality before (including convictions). 33% of homosexuals who have been convicted once are convicted the second time 1 - 3 years after the first offense. Many homosexuals are actually bi-sexual, are married, have children and show no physical peculiarities. All homosexual offenses, also those committed in a setting of general sexual overstimulation or during alcoholic intoxication, are due to actual inclination and do not occur in normals. People who commit such acts are always deviants in the general sense of the word, and are not suitable for positions as superiors in a military organization.

In his report to the Judge Advocate General of the German Army dated 4 November 1942 (Appendix 1, No. 14), the Chief Consultant in Psychiatry goes over the same ground again, but adds that a discharge of those members of the army who have been punished for homosexual acts is strongly advised against because "many of these psychopaths would regard this as a desirable premium and it would show elements disinclined to military service a simple way out of the army". He reiterates the point that the practical differentiation between culprits who have committed a homosexual act because of deeply rooted inclination, and those who have been seduced, or who have deviated because of general sexual overstimulation, is in practice not feasible. They are hard to differentiate because the statements of these psychopathic personalities are usually not reliable and one cannot even know on the basis of an examination of the accused whether it was his first offense, unless he has a record of previous offenses. The only possible exception for a differentiation in terms of allowing some to redeem themselves before the enemy before expiration of their sentence could be made in the case of those who are definitely established as victims of seduction by others. As to the proposition now under consideration by the Judge Advocate of the Army, namely, whether the death penalty for homosexual offenses should be instituted in the Army, it is suggested that it should definitely be restricted to those who seduced others, especially young soldiers, and to those who abused their position of authority toward subordinates. But the Chief Psychiatric Consultant adds, that the deterrent effect of the death penalty in such

cases should not be overestimated: "Indeed, a deterrent effect could only then be exerted if the sentences as well as the executions were publicly announced. But whether this would be wise in view of enemy propaganda is a problem which should be given ample consideration". There is, of course, no objection against the death penalty for homosexuality in Elite formations, such as the SS, because these are voluntary organizations whose members know about these rules before they are enrolled. But with the Army, which is a people's army involving obligatory service, things are different.

As to the figures given by the Gestapo, the Chief Consultant in Psychiatry considered 4,000,000 too high an estimate. He felt that the number of 2,000,000 which resulted from a special survey instituted by the S. S. newspaper, "Schwarze Corps" (The Black Guard), is likely to be closer to the truth. The Chief Consultant goes on to say: "It cannot be assumed that the German people are on the way of a shift into homosexual inclination. The increase of the number of homosexual offenses is due to the fact that since 1935, not only acts similar to intercourse, but also mutual masturbation are considered punishable, and furthermore because we are now reaping the effects of systematic poisoning of our youth by the "Wandervogel" and other youth organizations, because those infected youngsters have now grown up into positions of leadership". (This is a remarkably frank statement, considering the fact that it was made almost ten years after the Nazis had gained power in Germany, which gave them complete control of youth organizations, and of which they had already controlled large sections long before their actual accession to power). The Chief Consultant made the following practical suggestions:

(1) Prevention: The sexual need of all ranks should be relieved by, (a) furloughs, and (b) by the institution of brothels. It is stressed that an ostrich policy is completely out of place in this matter.

(2) Punishment: Every case should be cleared in all its aspects, including psychiatric examination. Punishment should not be in military prisons, but in such field punishment battalions as are in close contact with the enemy. All people convicted of homosexuality, even those who committed the crime in complete intoxication and as their first offense, must be declared permanently unsuitable for holding any commissioned or non-commissioned rank, even if they have fought well before the enemy. The only exception could be made with seduced juveniles at their first offense.

(3) Determent: In the case of flagrant seducers of

youngsters there should be no objection to the death penalty. Insufficient consideration has been given to the penalty of castration, which at the same time is likely to be of benefit therapeutically in 70 - 80% of the cases, since it leads to reduction of criminal and sexual ambition. The contemplated measure to dismiss people convicted of homosexuality from the army after expiration of their sentence is strongly advised against. A visible physical branding of recidivists should be considered.

The final regulation which emerged from the Chief Commanding General of the Army and the Führerhauptquartier dated 19 May 1943, and supplements of 8.6.43 and 7.8.43 (Appendix 1, Nos. 15-17), distinguishes three groups of culprits:

(a) those who have committed the act because of deeply rooted inclination or because of apparently incorrigible drive;

(b) those who deviated only once, especially under the influence of seduction, and

(c) borderline cases in which deeply rooted inclination is doubtful.

Those in group (a) must be punished by long penitentiary terms in civilian prisons ("Zuchthaus"). In severe cases, the death penalty is authorized. All those convicted in this group are to be dismissed dishonorably from military service. Those in group (b) are to be sentenced to terms in military prisons and may be given a chance to redeem themselves before the enemy, either after serving all or part of their sentence. It is specially stressed that the mere fact that the man was intoxicated at the time of the crime does not automatically place him into this group. Those in group (c) are to be given sentences in military prison camps at the front, and may be released to field punishment battalions under conditions of close supervision. If they are found militarily useless, they should be turned over to the civilian authorities for completion of their prison term. In the case of relapse, they should be treated like those in group (a). This regulation, which is signed by General Keitel, stresses that if a man had been left in the army against the regulations as applying to group (a), and this is discovered later, he is to be dismissed even if in the interim he had fought well as a soldier. An exception can be made only if such a soldier has performed extremely well for very long periods after his offense. The supplement (Appendix 1, No. 17) re-emphasizes that all soldiers punished for homosexual offenses and who fall into group (a), have to be dishonorably dismissed from the army.

These regulations were further supplemented by a new

law concerning all sexual offenses dated 4 July 1943 (Appendix 1, No. 18), which as an additional deterrent measure authorizes the courts to sentence all culprits found guilty of abnormal sexual acts, to punitive castration. Abnormal sexual acts include: rape, rape of children, homosexuality, all injuries committed for the purpose of sexual gratification, all torture of animals for sexual purposes and all sexual acts committed in public. Castration can also be ordered in those cases in this group who have been found legally insane. However, it is stated that castration should not be ordered in culprits under 21 years of age at the time of the offense.

A regulation dated 15/12/1944 gives directives concerning the principles of expert testimony in cases of crimes against human nature (Appendix 1, No. 19), which were derived from conferences of the Consulting Psychiatrists of the army, of the S.S., and of other consulting legal and medical authorities. It is emphasized that a decision whether a deeply rooted inclination ("Hang") exists should be made on the basis of the concrete facts of the accused's life history and personality, and not on the basis of an expert's opinion, who on general medical or scientific grounds considers it a matter of inborn constitution or acquired sexual peculiarity. The term "inclination" should be interpreted in the criminalistic sense as to whether the accused is a personality of the type of the habitual offender, rather than on the basis of biologic consideration. As a matter of fact, the Commission goes so far as to recommend that the question of whether deeply rooted inclination existed should never be put to the medical expert, because it is not a medical but a criminologic category. If expert testimony is needed, a special expert from the criminal police, the man in charge of its central office for combatting homosexuality, is the one to be consulted, and not a medical man or a psychiatrist. The term "inclination" should be understood in terms of incorrigibility, and this can be the case in the rare individuals who are born homosexuals, as well as in individuals who had been seduced in early youth and who then made a habit of homosexual practice. The important point is stressed that there is no medical or other scientific reason why the crime of homosexuality should in principle be treated differently from other crimes, and that the sole medical reasons for lack of criminal responsibility should be the same ones which apply to other kinds of crime as well, such as insanity, organic cerebral disease, diseases of the endocrine glands, including actual diseases of the testicles, the hypophysis or the thyroid. It is recommended, however, that expert psychiatric testimony should also be considered in those cases in which offenses

occurred only under the influence of alcohol, or when the offense was committed in a state of extreme drowsiness from sleep, or when the culprit was under the age of 21. In army courts, a medical officer trained in neuropsychiatry should always be attached to the court.

A number of interesting points concerning other subjects are contained in a collection of directives published on 30 September 1944 (Appendix 1, No. 20). First of all it is decreed that the duty of submission to treatment does not apply to those patients suffering from mental diseases, whose full military usefulness is not likely to be restored by therapeutic measures. For such patients treatment is optional, except for sedation, as well as a small number of emergency metrazol treatments, in states of excitement in forward areas. Another exception are those cases of organic psychoses that are likely to be restored to duty, and therefore have to submit to any treatment likely to lead to restoration to duty (Item 209). Item 225, in the same publication, stresses the importance of psychogenic overlays in cases of rheumatism and neuritis, which is said to be less frequent in cases of polyarthritis than in sciatic and other chronic neuritides. Psychological guidance by the physicians of rheumatism sections of hospitals is considered essential. Severe and therapy resistant cases should be transferred for "suggestion treatment" to special neurological treatment sections.

Item 232 of the same set of regulations lays down the terminology for psychogenic functional disorders. The terms "neurosis", "war neurosis", "war hysteria", are no longer to be used. They are to be replaced by the term "psychogenic functional disorder", with the addition of the kind of disorder, such as "psychogenic speech disorder", "psychogenic gait disorder", or "psychologically fixed radial palsy" respectively. These diagnostic terms should not be all, but should be supplemented by a description of the personality of the patient and of the development of the disturbance.

A memorandum concerning sciatica (Appendix 1, No. 21), gives directives for the diagnosis and differential diagnosis of sciatic neuritis. A special memorandum on causalgia, dated 27 April 1942, is of interest. It gives a very good description of the condition and strongly recommends sympathetic ganglionectomy or sympathectomy, by alcohol injection, or by surgical extirpation of the stellate ganglion or of the lumbar sympathetic trunk respectively. This is highly recommended as the best and most effective therapy. Other memoranda (Appendix 1, Nos.

23, 24, and 25) concern the treatment of Bell's palsy, the handling of gunshot wounds of the peripheral nerves, and the special care of patients with peripheral nerve palsies. A memorandum dated 7 July 1941, (Appendix 1, No. 26) gives a good presentation of the reasons why the question as to whether cases of multiple sclerosis developed or were aggravated during military service should be answered in the affirmative.

Of special interest is a complete set of collective reports (Appendix 1, Nos. 27-36), issued by the Office of the Chief Consultant in Psychiatry in the Surgeon General's Department, compiled on the basis of quarterly reports sent to him from the various neuropsychiatrists in the field with army units as well as with hospitals. Study of these reports (the first was issued on 24 July 1942, the tenth in December 1944) permits one to obtain a very good historical survey of the neuropsychiatric activities and developments in the German army during that important phase of the war beginning before the turn of the tide at El Alamein and in North Africa, and ending at a time when, on the Eastern Front at least, the German army was basically beaten.

The first of these collective reports dated 24 July 1942 (Appendix 1 No. 27), contains data under a number of headings beginning with general matters. It is stated that in the North African theater, combat soldiers of mixed athletic-pyknic physical type, especially those between 25 and 35 years of age, proved best suited in terms of stability and stamina. Another item is the recommendation of the institution of warming and rest halls along roads at intervals of every 300 kilometers. Cases of glycol intoxication sustained from contaminated coffee are reported, as well as 22 cases of tetra-ethyl lead intoxication with Korsakow-like and delirious psychoses sustained from inhalation of fumes from a wood stain, also cases of confusional psychoses after evipan anaesthesia. It is furthermore stressed that too many neuropsychiatric cases are distributed all over the medical sections of field hospitals, instead of being concentrated in neuropsychiatric sections. Also improvement of facilities for spinal fluid diagnosis are urged. The neuropsychiatric center in Berlin is reported as being overloaded with excessively large groups of unannounced entrants from forward areas, and its director (Dr. de Crinis), also complains that it is overloaded with patients who should never have been inducted into the Army, but who should have been recognized as unsuitable for military service when they were examined for induction..

Furthermore, it is objected that epileptics are being kept in military hospitals too long, sometimes for months, in order to wait for an attack. Diagnosis of epilepsy can be made on the basis of documented history and associated personality changes without such unnecessary delay.

The special section of this report points out in reference to brain injuries that too many cases with vasomotor disturbances or Parkinsonian pictures after cranio-cerebral trauma are being mistaken for neuropathy; that 25% of gunshot wounds of the brain show aphasia; that hypertonic glucose should be given intravenously while lumbar punctures are being performed; that psychological disturbances are frequent in lesions of the temporal lobe; and the warning is issued against too frequent transfers of patients with organic brain lesions from one hospital to another.

An interesting chapter deals with the neuropsychiatric complications of typhus. The following occur: mental cloudiness, delirium, confusion, self-inflicted injuries, aggressive outbursts against others, frontal ataxia, masked facies, deafness, pyramidal signs, epileptic fits, all kinds of focal syndromes of the hemispheres, and catatonic states. Of special interest was the observation of recrudescence of symptoms of old, apparently healed diseases of the central nervous system under the influence of typhus fever. It is urged that experimental treatment aimed at the prevention of these cerebral complications be carried out in prisoner of war camps. The following are recommended: prescjod (10 cc daily intravenously); Argotropin, Argochrom, Urotropin and Trypaflavin (2% intravenously); prostigmin against muscular weakness; and serum from convalescents in the early stages of the disease. It is further stated that in typhus occipital puncture is preferable to lumbar, because of the associated edema of the brain.

In regard to other problems, the special section states that cases of true epidemic encephalitis lethargica have been observed; further, that meningococcus meningitis has become relatively frequent and that sulfonamides give good results in this condition, but that it should be differentiated from the meningitis incidental to Pappataci fever and trichinosis. Of the latter condition, 120 cases have been observed. There have been sporadic cases of poliomyelitis. In regard to lesions of the peripheral nervous system, the report stresses the importance of rehabilitation centers for patients with peripheral nerve palsies. It is further stressed that gunshot wounds of the

peripheral nerves, after healing of the primary wound, should not be reoperated on for purposes of nerve repair before four months have elapsed because otherwise normal tendency to healing would be interfered with. The frequency of post-diphtheric paralyses is emphasized and overlooking of the associated paralysis of accommodation is warned against. As to treatment of causalgia, this report states that opinions as to the best treatment are divided; the different treatments with high doses of vitamin B, insulin and vaccineurin, periarterial sympathectomy, and with alcohol injection or extirpation of the stellate ganglion are all recommended. It is stressed that the number of neuritides and polyneuritides has increased greatly during the last winter, most of them being post-diphtheritic, especially due to wound diphtheria. In addition, there were numerous cases of polyneuritis caused by dysentery, atabrin treatment, and treatment of gonorrhoea with sulfonamides. Furthermore, there were polyneuritides during the winter campaign in Russia, due to marked emaciation caused by the hardships of the campaign, and poor nutrition. There were also polyneuritides in pappataci fever. Of the psychoses, those occurring in typhus and dysentery were emphasized.

It is stated that depressions, especially reactive ones, and especially those with hypochondriac complaints, were too often mistaken for other illnesses and were not seen often enough in consultation by the psychiatrists. The neuroses and psychopathies are reported under the heading of "deviant reactions" ("Abartige Reaktionen"). Bumke is quoted as saying that "in view of the deep scooping out of the armed strength, the number of psychopaths is increasing". Sioli, another consultant, is quoted as saying: "used-upness in older officers in the age group of 40 - 49 years, is leading to frictions which interfere with the performance of duty". Gross hysterical disturbances are described as rare. It is stressed that the differential diagnosis between schizophrenia and psychogenic reactions to catastrophic events can be difficult.

The second report was issued in February 1943 (Appendix 1, No. 28). As to brain injuries, the operative removal of traumatized brain is urged even in those cases in which the dura was not injured, although an exceptional case may become infected and die from purulent encephalitis. It is stated that in the beginning of illness from meningitis the patients become delirious and excited, while at the stage where the infection progresses through the brain toward the ventricle, psychomotor inhibition or stupor manifest themselves. The use of pneumoencephalography in the localization of brain abscesses is urged. It is stated that cerebral damage after wounds involving

the carotid artery occurs, after ligation of the carotid, due to thrombosis and embolism. In the chapter on encephalitis, the occurrence of encephalitis japonica in Germany is reported. The disease begins with pseudoneurasthenic weakness, including tremors, difficulty in concentration and emotional lability; sometimes epileptiform attacks occur. The spinal fluid may show only positive cell changes, without other characteristic changes. Cases of encephalitis due to pappataci fever are also reported, with increase of cells (15 - 227), and with increased sugar of about 151 mg%, but without increase of protein. This report also includes a detailed discussion of several groups of altogether 75 cases of polyneuritis, or rather polyradiculoneuritis, including some with ascending paralysis of the Landry type, which occurred in the form of small local epidemics. The differential diagnosis, especially differences in the spinal fluid findings, from the Guillain-Barré syndrome, of which several cases have likewise been observed, are elaborated upon. In reference to other lesions of the peripheral nerves, the opinion is recorded that some of the peculiar contractures with sympathetic disturbances are not psychogenic but possibly represent a motor counterpart to sensory causalgia. They are considered "sympathogenic", because they respond well to extirpation of the ganglion stellatum, like the cases of causalgia of the sensory type. Excellent results with rehabilitation programs following peripheral nerve lesions, obtained in a military hospital in Vienna are reported. As to the neural manifestation of typhus, this report adds the observation of spinal symptoms, including paralysis of the bladder. It is stressed that as late as three months after recovery from the disease, patients convalescing from typhus may show an increased irritability leading to conflicts with their environment, such as was found in a series of 120 cases. This should be given due consideration when giving medico-legal expert testimony in such cases. Furthermore, it is stated that even some of the post-diphtheric paralyses may show a tendency to ascend in the characteristic manner of the Landry type of paralysis. The good therapeutic results in treating causalgia with sympathectomy are emphasized, although other authors report favorable results with insulin (Mauz). A special chapter deals with the condition described by the Germans as "Russian headache fever", which is a brief illness of 2 - 6 days duration, beginning with pain in the occiput and over the eyes; later full fledged meningism, with slight increase of spinal fluid pressure but insignificant changes of protein and cells develop. The good prognosis of these patients is stressed and their treatment within the troop unit without admission to a hospital is recommended.

In regard to epilepsy, it is stated that a great number of patients referred as epileptics to hospitals from troop units are not cases of epilepsy, but other types of seizures which occur in vasolabile people under the influence of prolonged fatigue, hunger, exhaustion, ingestion of alcohol after long periods of abstinence, psychological stress, and so forth. As to the psychoses, it is emphasized that the diagnosis of schizophrenia is being made too often, as illustrated in a group of 8 soldiers evacuated to the rear for schizophrenia, of whom 7 turned out to be suffering from psychogenic reactive confusion states. On the other hand, it is stated that the diagnosis of cyclothymic illness is not being made often enough, because while medical reports of cases of this diagnostic category are rare, the inspection of court cases and the reports of suicides stress the fact that the condition is probably more frequent than assumed, but remains unrecognized clinically. As to mental deficiency, it is stated that among deserters the number of mental defectives is very high. It is stressed that mental defectives usually fail under field conditions even though they may have performed well under training conditions, and that mental defectives should either be assigned for labor duty only, or be discharged from the service.

As to the "deviant reactions", it is reported that a disproportionately high number of hysteric disturbances occur in Hungarian soldiers and officers, particularly psychogenic disturbances of the gait, palsies, and loss of speech, hearing and vision. However, it is added that a significant spread of disturbing war neurosis had not occurred among German troops. Sioli stresses the importance of early treatment of states of psychological failure, psychopathic reactions and hysteric reactions. This section of the report goes on to say that there has been only a slight increase of psychogenic disturbances, which necessitated the creation of a new department in the form of a military section attached to the neuropsychiatric clinic of the university of Munich Medical School, so that the Consultant in Psychiatry could exert a continuous influence upon the war tremblers. Up to now, it is stated one was able to cope with them effectively during this war.

In addition, this report mentions three fatal cases of arsphenamine encephalitis. It warns against the indiscriminate dusting of sulfonamide powder into cerebral wounds, as paralysis has occurred due to penetration of such sulfonamide powders into the spinal canal. An unusual case of acute porphyrinuria with epileptic convulsions is also reported.

The third report was issued in March 1943 (Appendix 1, No. 29). It stresses that in medical examinations preceding

induction into the military service too many cases of schizophrenia, mental deficiency and epilepsy fail to be recognized, and that individuals thought to be afflicted with mental deficiency, epilepsy or neurasthenia, should not be accepted into the military service without checking information collected by the local police.

As to lesions of the brain, it is stressed that psychologists in examining them tend too much to go their own ways, to collect too much useless material, and to perform too many useless tests which interfere with the morale of the brain injured patients. It is further stated that contusions with definite focal symptoms are too frequently mistaken for simple concussions. It is again stressed that personality changes may be an early symptom of organic disease of the brain, including brain tumors.

An interesting chapter on encephalitis deals with differential diagnosis. The encephalitic symptoms of typhus are described as similar to encephalitis lethargica, including the late symptoms such as masked facies, eye muscle palsies, etc. So-called "late summer encephalitis" was identified as encephalitis japonica. An interesting case of encephalitis japonica is reported in detail. There was high fever (40.6°C), and marked choreo-athetotic hyperkinesis; the spinal fluid showed marked increase of cells (262) and increase in protein. This case responded well to sulfanilamide (Eubasin). It is again stressed that too many patients with post-encephalitic and other extrapyramidal syndromes are mistaken for "war tremblers". The case of a post-encephalitic was quoted who was inducted in 1939 in spite of a full-blown syndrome of post-encephalitic tremor, but who was used as drummer in the regimental band because of this infirmity. It was not until July 1942 that he was returned to the Zone of the Interior in Germany because of "brain weakness", and it took until November for the correct diagnosis of his condition to be established.

In regard to polyneuritides, it is again stressed that the diagnosis of post-diphtheric polyneuritis can be made from the history of palsy of the velum palatinum in the early stage of the disease. Interesting is the description of polyneuritic residuals in cases of poliomyelitis anterior. In addition to the polyneuritides following dysentery and other known illnesses and toxic states, the number of polyneuritides of unexplained etiology is described as great; and too many "are diagnosed as malingerers or gold-bricks in the early stages of their

illness." A case is quoted in which a somewhat immature soldier suffering from an undiagnosed polyneuritis caused by dysentery of the Flexner type of several months' duration, finally committed a self-inflicted injury by shooting himself through one hand "in order to get to a hospital". The diagnostic importance of spinal fluid examinations in this and similar conditions is stressed. A case of polyneuritis was also observed in a soldier who handled Russian diesel oil which contained an admixture of a yet undetermined nature. It is further stated that peripheral nerve injuries were frequent in gunshot wounds of the extremities. They were present in 7 out of 25 cases. Neurological disturbances of Parkinsonian type are described as frequent following typhus, and typhus patients who show such symptoms during convalescence are particularly intolerant to alcohol. In regard to convulsive disorders, it is stressed that genuine epilepsy should be distinguished from vasomotor fainting spells, tetanoid attacks and symptomatic epilepsy. Furthermore, it is stressed that harmless attacks of fainting following severe effort are not infrequently utilized later in a purposeful manner. It is stated that epileptics usually are very eager to stay in combat and in the army, and that such eagerness is usually a symptom in favor of epilepsy. Abstinence from alcoholic beverages is urged in all cases of epilepsy, as exemplified in the case of a 52-year old officer whose doctor ordered cognac for the control of his epileptic fits, which were due to "late epilepsy" on an arteriosclerotic basis, with distinctly adverse results. In regard to the psychoses, the differential diagnosis between schizophrenia and exogenous psychoses of the amentia type is discussed and medical officers are reminded that even meningitis may begin with delirium. Furthermore, it is stressed that not enough medical officers consider the likelihood of an endogenous depression in patients who complain of indefinite malaise, sleeplessness, anxious tension, and loss of energy and courage, and that this resulted in several cases of suicide due to a combination of the following factors: (1) the regimental surgeon did not think of the possibility of a depression, (2) the regimental surgeon did not take a history from the members of the patient's outfit, and (3) members of the patient's outfit didnot transmit their observations to the regimental surgeon.

As to the "deviant reactions", the report stresses that too many soldiers suffering from organic illnesses are being suspected of malingering or aggravation; and that electro-shock treatment should not be considered in psychogenic stupors, because it does not leave a memory record.

A special small chapter is devoted to pellagra of which several cases had occurred in severely emaciated soldiers after long periods of diarrhoea. A note on tetanus states that cases have been observed in soldiers in spite of previous inoculations against tetanus.

The fourth report was issued in July 1943 (Appendix 1, No. 30). It is stressed that the new regulations concerning military fitness do not apply to the psychopaths. They remain a purely educational, disciplinary and legal problem, unless they deviate to such a severe degree that they must be considered legally insane. Psychopaths are defined as people of normal physical fitness but with defects of character (the criminal, the malevolent, the anti-social, the homosexual, etc).

In regard to neurological matters, it is urged that patients suffering from multiple sclerosis be discharged from military service. In regard to causalgia, the excellent and immediate therapeutic results of sympathectomy or ganglionectomy are emphasized. However, care in the proper differential diagnosis of the causalgic syndrome is urged, particularly its differentiation from traumatic neuritides, among others those caused by missiles pressing upon a nerve. The latter, for instance, are benefitted by removal of the missile, but not by sympathectomy or ganglionectomy. The report also contains a statement concerning a rather curious electro-therapeutic device built by an engineer in Vienna, and reported by a Dr. Fuchs, which is constructed on the principle of transforming action currents from healthy muscles into currents which stimulate adjacent paralyzed but faradically excitable muscle.

As to injuries of the brain, the use of encephalography was emphasized, especially for the detection of indirect lesions of the brain caused by gunshot wounds of the face without direct injury of the skull capsule. It is further stated that personality changes caused by brain injuries are too often mistaken for psychogenic or constitutional ones. Brain trauma can create a transitory state of release from inhibitions, especially after injury of the frontal lobes, and a person thus injured can deviate toward the asocial and criminal side. A special case is reported in which a man who, after a through-and-through gunshot wound of the head, developed a quadrantic hemianopia as the only neurological symptom, in addition to a paranoid personality change. Two cases of cerebral vascular accidents in young people are described. Among the residuals of spinal injuries, especially blunt ones, development of arachnitis fibrosa

cystice some distance from the original injury is described as a point to remember.

As to the "psychogenic disturbances", it is stressed that if possible "war tremblers" should be treated on mixed psychiatric-neurological wards. In view of cases of suicide which occurred, physicians in charge of venereal sections are urged to send soldiers, especially married ones who express the fear that they may be infected with venereal disease, to a psychiatrist for consultation. As to epilepsy, it is stated that special attention should be paid to the proper diagnostic differentiation of cases of genuine epilepsy from cases of the Jacksonnian type and other conditions which are different from epilepsy. The proneness to fits seems to be quite generally increased due to the influences of war. Often, however, these fits are not epileptic but are vaso-vagal attacks in patients with an otherwise normal cardiovascular system, but with signs of increased vasolability and increased nervous reactivity.

In regard to the psychoses, it is stressed that too many patients are still being diagnosed as cases of schizophrenia who in reality are suffering from functional disorders, psychogenic reactions, homesickness reactions, exhaustion states or other episodic states of excitation, in some cases even exogenous psychoses, especially typhus, which frequently produces catatonic-hyperkinetic states. A special chapter of this report reprints, and urges the compliance with, the "regulations concerning hysteria and malingering with special reference to psychogenic overlays in cases of organic injuries", which were issued as supplements to the directive of 31 August 1942 (H.Dv. 209/-2, Sheet 126. See Appendix 1, No. 2). This supplement is essentially a re-emphasis of the points made there. A very interesting chapter in the report deals with the differential diagnosis between poliomyelitis, virus meningitides, epidemic encephalitis, the panencephalitides (including typhus encephalitis and the endemic panencephalitis which is probably encephalitis japonica), the demyelinizing encephalomyelitides, mononeuritis, plexusneuritis and polyneuritis. This discussion of differential diagnosis also includes directives for treatment of these various conditions. For the post-diphtheric palsies, treatment with malaria is described as useful.

The fifth report was issued September 1943 (Appendix 1, No. 31). The first general chapter deals with several interesting points. The veterans administration complained that the question of contributory action of exogenous

influences incidental to war service upon the development of neurologic and psychiatric conditions was being neglected, and was being denied in dogmatic form. This complaint went on to state that the manner in which everything was being attributed to constitution, and the role of all exogenous influences was being denied purely on principle, did violent injustice to the facts. Furthermore, the veterans' administration suspected that this was not being done on the merits of individual cases, but due to fear on the part of the neuropsychiatrists to set a precedent. In regard to this complaint, the Chief Neuro-Psychiatric Consultant urged that neuropsychiatric medical officers should consider every case on its own merits.

The chapter on medico-legal matters stated that lack of criminal responsibility was being found too often and "too generously" by court experts. In one case, intense homesickness was found to have produced a state of inability to distinguish between right and wrong in reference to an act of absence without leave. "It is emphasized again that it is not the purpose of the law to protect psychopaths, but to protect the community from psychopaths." On the other hand, it is urged to avoid the expression of "malingering" because "there is no such thing according to military law", and besides, in three out of five cases of "malingering" the complaints were on review found to have been due to organic disease in three, and due to genuine neurotic fixation in the other two. One of the organic cases even showed a marked increase of sedimentation rate; it is pointed out that the least that could be expected of medical officers before they use the word "malingerer" would be to conduct a careful clinical examination.

This report contains an instructive review of spinal fluid diagnosis by Zucker. In the chapter on brain injuries, a case is reported in which a pistol ball that entered the right frontal lobe migrated into the right temporal lobe outside the ventricular system without causing an abscess. Furthermore, two cases of injury of the central nervous system due to lightning are reported by v. Baeyer. One of them showed bilateral Babinski, clouding of consciousness, and ample blood in the spinal fluid. It is further stressed that gunshot wounds of the back, even if they leave the spine untouched, can cause a suberachnoid haemorrhage due to a peculiar remote effect. Lumbar puncture is urged in those cases, especially as a diagnostic measure, because too many of the spinal symptoms complained of by these patients are mistaken for functional ones, unless the cases are properly examined. An interest-

ing case of post-diphtheric polyneuritis with involvement of the temporal and masseter muscles with resulting inability to chew, caused by bilateral involvement of the third branch of the trigeminal nerve, is described. The patient gave a typical history of paralysis of the velum palatinum and accommodation at the beginning of his illness; the protein content of the spinal fluid was elevated. It is stressed that in such cases elevation of protein in the spinal fluid may persist for 3 - 4 months, and that for this and other reasons patients should be on limited duty for at least 3 - 4 months after recovery from post-diphtheric palsy. The report contains a description of a rare and interesting case of true blast injury. Several hours after an explosion in close proximity this patient developed hiccoughs and tic-like movements of the head toward the left, at the same time elevation of temperature to 39°C and deep cloudiness of consciousness. All these symptoms disappeared on the next day but lassitude and fatigue remained. Injury of the brain stem causing an ephemeral encephalitis-like picture was considered.

The chapter on neuropsychiatric residuals following typhus lists and describes marked and prolonged pseudo-neurasthenic states, neuritides, sometimes with marked trophic changes suggesting malum perforans, optic neuritides, vascular cerebral focal lesions with hemiplegias and aphasias, and with enormous dilatation of the ventricles of the brain, paranoid and schizophreniform states and narcolepsy-like syndromes. It is urged that convalescents from typhus be placed only on very light duty and not be sent through strenuous rehabilitation programs. Instead, clerical work for typhus convalescents is recommended.

Cases of lymphocytic meningitis which start as status epilepticus, as well as neuritides are described in cases of African relapsing fever. Neuritides are likewise described in Wolhynian fever.

As to psychogenic disturbances, the psychogenic fixation of physical symptoms, for instance, wrist drop after radial palsy, is stressed and the fact that treatment is too often delayed in such cases is emphasized. Bürger-Prinz reported the results of insulin shock treatment in psychogenic disturbances. He claimed to have obtained good results and made the interesting observation that the severe therapy-resistent cases which he selected for the treatment behaved in many respects like schizophrenias, especially in regard to their marked tolerance to insulin. In one remarkable case of hysteric palsy 350 units were necessary to produce coma, in other cases 250 units.

The sixth report was issued in March 1944 (Appendix 1, No. 32). It states that patients who were sterilized for mental illness are not eligible for induction into the army, but that those who were inducted before this new regulation should not be discharged from the army. Furthermore, the importance of careful physical examinations and laboratory studies in medico-legal cases was stressed. On the other hand, experts were urged in cases of doubt not to find that the condition of paragraph 51, Section2 (diminution of criminal responsibility) exists, but rather to content themselves with a psychiatric-psychological description of the accused in order to make it possible for the court to appreciate the accused's psychological motivations, rather than to take too active a hand in judicial matters. Furthermore, the statement is made that a number of cases of psychic disturbances during the incubation period of typhus have become known and that this fact should be taken into account when typhus patients who committed crimes during the incubation period are under medico-legal consideration. The report also contains an interesting review of self-mutilation, on the basis of a study of 25 cases by von Baeyer. Of the conclusions, the following are of interest:
(1) Self-mutilations are committed by predominantly young enlisted men from rural districts and occupations. Only a small minority have a previous criminal record.
(2) All self-mutilations were by small arms fire.
(3) All culprits were either in a combat area, near to a combat area, or on the way to a combat area; they committed the crime during a lull in combat. Particularly predisposed were people who recently returned to a combat zone after long periods in military hospitals in the rear.
(4) All these culprits had slight abnormal traits in the sense of low intelligence and slight psychopathic deviation, of an anxious, soft and infantile type, but marked abnormal reactions such as real acute emotional disturbances, psychotic states, or psychogenic fugue states were found only rarely.
(5) The decisive motive is usually fear for the soldier's own life. More rarely the desire to escape from the efforts and difficulties of front life are contributory, as well as disagreements with comrades or superiors, disappointed desire for recognition, or homesickness. Von Baeyer makes the following interesting observation: most of the people who committed the crime of self-inflicted injury did not count with the fact that it was possible to discover the self-inflicted nature of the injury without such observation having been made by eye-witnesses, and they stated they would not have done it had they known it could be found out, in spite of the fact that there were no eye-witnesses to the act. Dr. Von Baeyer makes the

interesting recommendation to prevent self-inflicted injuries by a program of instruction for soldiers, especially those returning to the front from long periods of leave or hospitalization in the Zone of the Interior, telling them that medical experts can recognize self-inflicted injuries. He feels that most of them are the type of personality who can benefit from comradely encouragement and admonition, as well as from information concerning the likelihood of the discovery and the consequences of such acts, and that they could thus be restrained from committing the act; that most of them are harmless, rather well-integrated social types, and that fundamentally rotten or criminalistic natures were very rare among self-mutilators.

Von Baeyer also made a report concerning epileptoid personalities, that is people who come from families of epileptics without having seizures themselves, but who show the personality characteristics of epileptics, such as circumstantiality, slowness, and decreased efficiency. He accepted for these people the term "enechetic constitution", which had been first coined by Mauz, and he stated that they were generally more useful in the rear than at the front.

Among the psychoses, the importance of manic episodes, especially among violators of military discipline was stressed. In one of such cases, a manic episode expressed by undisciplined behavior occurred in a soldier of previously immaculate disciplinary record, after a severe air raid. Bürger-Prinz reported that after the severe bombing of Hamburg there was a rapid turnover in manic-depressive patients. Some apparently were shocked out of their depressions by the raid, in others depressions were elicited by the raids. Cases of exogenous psychosis produced by "canned heat", and by atropine intoxication derived from captured Russian eggs, were reported. In regard to suicide, it is stated that the danger of the "suicide of convalescents returned to duty" was being underestimated, especially in older worn-out people.

Of great interest is a report on the results of treatment with strong galvanic currents (usually of 60-100 milliamperes) in the control of psychogenic and hysteric disturbances, which was contributed by Dr. Panse, the originator of the method. The method was supposed to work like a charm and produced cures in cases resistant to all other forms of therapy. Two rather extraordinary examples were presented:

Case 1: A non-commissioned officer, on 25.5.40,

suffered a penetrating gunshot wound through the left shoulder with an extensive flesh wound. Six weeks later he developed the typical picture of hysterical shaking palsy, which became aggravated when he heard that his brother had been killed in action. During August he was treated with relaxation treatments which were unsuccessful, but on 28 October 1940, he was discharged from the hospital as fit for garrison duty in the Zone of the Interior, and given a long furlough. The army, however, could not use him even in a limited service assignment because of his tremor, and he was discharged from military service as permanently unfit for duty on 22 May 1941. A week later he applied for a pension. When he was examined two months later some residuals of the shoulder injury were found, for which he received some compensation, but for the remainder of his illness psychotherapeutic treatment was recommended. Three months later he applied for a full pension, because he claimed to be entirely unable to do any work. He was admitted to a special neuropsychiatric hospital in Berlin where he was treated for three months by hypnosis and narcohypnosis and strong faradic currents. Finally, prolonged sustained sleep treatment of 8-days duration was given. This treatment had been recommended on 28 January 1942, after an examination at the institute of Professor G. in Berlin (I suppose that Professor Göring is meant), and it was carried out at the University clinic for Nervous Diseases at the Charité in Berlin, where the patient stayed from 15.7.42 to 8.10.42. The tremor, however, remained unabated, nor did an attempt to use this patient in his old job as cashier succeed in removing the tremor. Finally the Chief Psychiatric Consultant to the Surgeon General of the army recommended treatment by intense galvanic currents at Dr. Panse's department . Dr. Panse found a shaking of the head similar to sign language saying "no", and marked shaking of the left arm, which increased with active motion. From 4 August to 16 August 1943, the patient was treated with strong galvanic currents with simultaneous suggestion. After the first two treatments, improvement of the strength in the left arm resulted, while the shaking of head and arm remained unchanged. On 16 August 1943,finally, by applying strong currents to the head, the shaking was completely eliminated. The patient expressed profuse gratitude for his cure. Shaking was abolished and the strength of the left arm was completely normal. However, because of slight stiffness in the left shoulder the patient could not lift the left arm for more than 160°. The patient was described as a "weak human being" with deficiency of psychic endurance and with marked tendency to psychogenic reactions. It was considered unfavorable to re-induct him into the military service, and he was discharged to his home as fit for civilian work. Only a small pension was granted to him on the basis of the slight organic

stiffness of his left shoulder joint.

Case 2 concerns an enlisted man who on 5 June 1940 sustained a gunshot wound in the left side of his neck, while simultaneously a falling tree hit him on the head and knocked him unconscious for nine hours. Following that he developed lockjaw, but no defect of the eardrum or fracture of the skull had occurred. On 2 October 1940, he developed paralysis of the left arm and left leg, which 5 weeks later was recognized as hysteric. Repeated daily faradic treatments until January 1942 (?) (should obviously read 1941) brought about very slight improvement. In March 1941 it is stated that "the neurosis of this patient is firmly established in a rut and psychologically irremediable". On 25 June 1941, he was dismissed as fit for labor only. Following this he was supposed to be trained to become a hardware salesman, but he failed in the examinations and as father of 8 children faced starvation. In order to cure the psychogenic paralysis of the left arm and leg he was sent for special treatment to a neuropsychiatric university hospital through the Veterans' Administration, where he stayed from 18 January to 19 April 1943. He refused hypnotic treatment and electric shock treatment. Treatment with strong faradic currents had no effect. He was judged resistant to therapy and it was recommended that he be sent as a war neurotic to the military section of a atate hospital for the insane. However, the consulting psychiatrist referred this patient to Dr. Panse's hospital for treatment with strong galvanic currents, combined with suggestive influence. After the first treatment on 23 August 1943, and in spite of definite initial success, the patient refused further treatment by the current. Since in view of the status of the patient as a veteran he could not be forced to submit to the treatment against his will, his reinduction into the service was arranged. He received his notice of reinduction on 6 September 1943, and on 8 September 1943 he was again treated with strong galvanic currents and simultaneous suggestive influence. Already after brief use of the current he was able to move the left arm and leg again, with complete freedom. He expressed gratitude. In order to stabilize the success, he received another brief treatment with strong galvanic current on 13 September 1943. After that he used his left arm and leg completely normally, and became a diligent worker in the labor platoon of the hospital. This patient is considered an outspoken hysterical character. In view of severe psychic deviations it was not recommended to return this patient to combat at the front. Furthermore, he is the father of 8 sons. He was discharged as fit for limited service.

Other items of the report include encephalitis after inoculation against dysentery, Parkinsonian and thalamic sequelae of Wolhynian fever, cerebral haemorrhages in young people caused by hemangiomata, frontal lobe syndromes following injury of the frontal lobes; and a review of the operative care for gunshot wounds of the brain, especially after directives worked out by Tönnis, which will be reviewed in a special section of this report. An interesting incidental finding in this review is the statement that the statistical results in terms of operative mortality became worse the better evacuation of wounded functioned between the battle field and the hospital, especially when it was possible to use Stork planes for rapid evacuation of the wounded. The reason for this was seen in the fact that the improved evacuation of the wounded led to admission into the hospital of greater numbers of patients who were poor operative risks, than when transportation conditions were difficult and the poor operative risks did not survive the hardships of transport. Another part of the report deals with nervous symptoms of thalamic-diencephalic type in cases of muscular rheumatism, and also mentions the occurrence of typical chorea minor in this condition. A therapeutic chapter deals with the good results which iontophoresis treatment with iodine exerted upon indurated and painful scars with contractures.

Again a great increase of post-diphtheric polyneuritides was reported, and the definite statement made that such post-diphtheric polyneuritides are always preceded 10 - 14 days earlier by transitory palsies of the velum palatinum and of ocular accommodation, and that the history of preceding palsy of the velum palatinum and of accommodation is diagnostic for post-diphtheric polyneuritis. It is also stated that the prognosis of cases in which paralysis of the limbs involves predominantly the distal parts is better than the prognosis where the proximal parts are predominantly involved. The spinal fluid in post-diphtheric polyneuritides usually shows increase in protein and slight increase in cells. Two cases are reported in which post-diphtheric palsies ascended in the fashion of Landry's paralysis and ended fatally.

Other polyneuritides were secondary to enterocolitis and other known infectious agents, and sometimes due to vitamin deficiencies and toxic agents. A series of 26 cases was reported which were caused by drinking a 1½% solution of metatricresyl-phosphate which was frequently misused as an intoxicating beverage on the Eastern front and which always led to paralysis, sometimes after a considerable period of latency.

The seventh report was likewise issued in March 1944 (Appendix 1, No. 33). Thiele reported another interesting case of blast injury. He stated that in blast injuries focal and generalized cerebral injuries could be caused without necessarily unconsciousness having been produced at the time of the blast, and he warned against mistaking the resulting psychic alterations for psychogenic states. His case was that of an officer of excellent qualifications and superior previous record, who, after being exposed to severe blast, began to commit all kinds of silly offenses which he carried out with poor judgment and in a clumsy manner. Later he also began to complain of vegetative disturbances and dizziness, and he developed epileptiform seizures, a generalized reduction of spontaneous motility marked circumstantiality, lability of affect, a certain degree of deafness which was at first regarded as psychogenic, until a spinal fuild examination revealed marked increase of cells and of pressure. After a few weeks, the whole syndrome cleared up and his previous excellent personality and stamina in combat returned. The picture was interpreted as a transitory hydrocephalic episode, due to some interference within the spinal fluid system caused by the blast.

Other reports of organic cases concerned a traumatic syndrome of Brown-Sequard, a case of rigor of hands and fingers, due to an isolated contralateral lesion of the pallidum, and a case of contusion with cerebellar signs and narcolepsy-like attacks. Again the occurrence of brain damage due to mere gunshot wounds of the face without involvement of the cranial capsule is stressed. There is a statement which warns of the danger of causing the spread of meningitis from an infected gunshot wound of the brain by the practice of insufflation of air through the spinal route. Again it is stressed that Parkinsonian changes are too frequently mistaken for functional ones. The good results of work therapy in the rehabilitation of patients with injuries of the brain, especially the results of supervised reintegration into manufacturing plants, is stressed. There is a report of excellent results following operative removal of scars in cases of traumatic epilepsy. 30% are reported as completely free from seizures; 50% are reported as improved; but it is not stated how much time elapsed after the operations. Treatment of causalgia is again discussed and the relative merits of sympathectomy, of "expectant and psychotherapeutic attitude", and of insulin treatment (25 units daily in combination with ephetonin such as recommended by Schaltenbrand) are discussed. It is again stressed that causalgia should not be mistaken with traumatic neuritides. For the latter group none of the above treatments but resection of the nerve or other direct operative remedial measures such as removal of a pressing shell fragment, are necessary. Another chapter

deals with the cerebral complications of malaria, including vascular accidents and hallucinatory psychoses.

The chapter on peripheral nerves gives figures for spontaneous restitution after various nerve injuries. A case is reported of high lesion of the sciatic nerve which had resulted in loss of function of only the tibial portion: spontaneous restitution began 16 months after the injury, and was complete with full restitution of function 26 months after the injury. In another case of gunshot wound of the sciatic nerve in the gluteal region which had led to loss of function of the peroneal portion only, restitution began 13 months after the injury. In the case of a gunshot wound of the radial nerve sustained in the lower third of the left upper arm, restitution began 9 months after the injury. It is stated that in lesions of the ulnar nerve, even if they are operated on, the prognosis for restitution of function of the small muscles of the hand is relatively poor.

A report by Kleist stressed the fact that not infrequently depressions are mistaken for internal medical illnesses in army hospitals. Their true nature is frequently not recognized until the patients commit suicide or make an attempt to do so. He gives the example of a case of an enlisted man who, up to the time of his suicide, was treated for a long time on the medical service of a military hospital under the diagnosis of "increased blood pressure, damage of the heart muscle, thyro-toxicosis", while nobody paid attention to the fact that he was constantly in a state of excitement, that he considered himself very ill, that he frequently appeared depressed, that he uttered dire fears in regard to his future, that he made statements about the fact that he did not know any more where to turn and that he finally ceased to talk to anybody at all. The chief consulting psychiatrist added the following note to this report: "it is quite probable that a great number of monosymptomatic endogenous depressions are residing on hospital services other than the neuropsychiatric one where they were admitted because of complaints concerning such other organ systems and are not being diagnosed as mental illnesses until they either make an attempt at suicide or actually commit it. Unless such events occur they frequently remain unrecognized. Such patients abound especially on the venereal wards of military hospitals, where they get themselves admitted as venereal disease suspects. The incorrigible fear of venereal disease which brings such patients to the doctor, is to be considered as a symptom of depression. Furthermore, many of such patients reside on

the medical services of military hospitals with the diagnosis of cardiac neurosis or gastric neurosis. The survey of the reports of suicides received at this office shows that particular attention should be paid to these cases."

In a brief final chapter on the psychogenic disturbances, Panse reports excellent results of his "suggestive treatment with high galvanic currents" in bed-wetters as well as in stutterers. The treatment was effective not only in those who started to stutter during the war but also in those who had already stuttered during their school years, but had lost stuttering after termination of their schooling.

Report No. 8 (Appendix 1, No. 34) was issued in June 1944. It stresses the fact that schizophrenias should not be overlooked and illustrates this lesson with the case of a patient who was mistaken for a reactive depression and discharged to duty, where he promptly killed a fellow soldier, and wounded another by gunfire in a fit of reaxacerbation of his illness. The report then dwells on the neuropsychiatric complications of typhus and Wolhynian fever which also included causalgic states and Parkinsonian pictures. The prohibition of the practice of provocation of seizures by means of hydration, or by combination of hydration with tonephin, was reiterated, and the practice of provocation of epileptic seizures in patients with head injuries for purposes of testing their seizure-proneness by means of metrazol was likewise prohibited. Polyneuritic, nephritic, and the thalamic complications with tonus changes and sensory changes, in rheumatic syndromes are discussed.

A very interesting report was one by Klimke who reported the increasing incidence of complaints concerning potency on the part of soldiers on home furlough. Distress about the fact that they had been a "flop" with their wives was their only complaint, and they usually worried about their future ability to produce offspring, but they had no other psychogenic or hysteric complaints. They were usually between the ages of 25 - 35, had been soldiers since the beginning of the war, and had always been with combat troops at the front. They usually responded well to encouragement and general information on the problem. Von Baeyer reported similar observations, and stated that soldiers on furlough from the Eastern front predominated among these cases.

The chapter on psychogenic disturbances gives interesting instructions in regard to the proper technique of the suggestion-therapy with high galvanic currents. It is stated

that if the proper technique is followed, therapy resistant cases are very rare, although the creation of a suitable milieu may not be as ideally possible elsewhere as in Ensen (Panse's own hospital service). It is stressed that it is of great importance that the physician carrying out the treatment should never show signs of anger or impatience when the soldier reacts poorly or in an evasive manner at first, but should always exhibit a medical and consequent attitude focussed purely upon the therapeutic result. A special regulation on the part of the Surgeon General of the armed forces prohibited the use of electric treatment as a means of differential diagnosis between true psychogenic illness and malingering, because mistakes are too easily made and because anxiety, especially due to fear of punishment, may produce genuine stuporous reactions which do not respond to electric treatment, but which are nevertheless not malingered, and may be motivated by strong emotional needs, for instance, shame. A recent case reported as that of a malingerer turned out to be a case of purulent meningitis with delirious confusion.

In the chapter on medico-legal activity, the criticism was made that too many people were being declared irresponsible due to severe alcoholic intoxication.

Of organic illnesses, tuberculous meningitis is discussed, as well as polyneuritides following inoculation against cholera. Two other interesting cases of blast injury were reported, both of them complicated by herpetic eruptions which were assumed to be due to injury of the spinal roots caused by the blast. Two cases of injury of the medulla oblongata caused by suboccipital puncture were reported as a warning against the performance of such punctures by the inexperienced, who were urged to practice on a cadaver before performing such tests in the living.

A special chapter dealt with the excellent results of the occupational therapy system for patients partly disabled by injuries of the brain or spinal cord. The patients, while being integrated into the industrial system, were seen every week by their physician. The factories into which such partly disabled men were sent, expressed themselves as extremely pleased with them, especially since these patients formed a nucleus of people with soldierly behavior and soldierly discipline within their organizations, the laboring force of which consisted largely of foreigners. The assignment of these convalescents to these factories resulted in a greatly reduced incidence of sabotage. Most of the convalescents were advanced after a comparatively short time to the status of foremen; especially the Ostmark

aircraft factories were interested in maintaining this system of infiltration of their laboring force with partly disabled military personnel who remained members of the army, but were paid at the same rate as civilian employees of the army hospital system.

Care in regard to paravertebral anaesthesia for neuralgic complaints following injury of the sciatic nerve is recommended because of occasional complications in terms of febrile reactions with spinal symptoms and inflammatory spinal fuild reactions. Kretschmer again recommended that patients, even if apparently recovered from multiple sclerosis or tabes should never be inducted into the army and should be discharged if found in the army. The report ends with a review of the fourth conference of consulting physicians, where those in the specialty group psychiatry and neurology discussed the theme of neurosis. The assembly came to the conclusion that the word "neurosis" interfered with the proper understanding, and caused misunderstandings of the true nature of this condition. Therefore, the following directives were issued to supplant the term neurosis by better and simpler terms. The following decisions were made:

"(1) Abnormal emotional reactions which are purely in the psychic sphere and do not cause any physical functional disorders are to be called 'abnormal reactions to events' (abnorme Erlebnisreaktionen), as, for instance, depression caused by sad events, anxiety reaction, fear reaction, and so forth. These abnormal reactions to events can occur in normal individuals, in people with character peculiarities, and in outright psychopathic personalities. The physician should never forget, however, that even some quite abnormal personalities, especially if they suffer from immaturity or personality disturbances are accessible to medical psychotherapeutic treatment to a large extent.

"(2) The physical manifestations which occur in the course of abnormal emotional reactions, are to be called 'psychogenic functional disorders caused by events' (psychogene erlebnisbedingte Funktionsstörungen). They include the so-called war neuroses in the form of trembling, shaking, stuttering, fits, palsies, protective postures, contractures, bladder disturbances, gastric and intestinal disturbances, i.e., a number of manifestations which hitherto were called 'hysteric'. However, it is ordered that such terms as 'war neurotic', 'war trembler', 'war hysteric' should be avoided entirely. The proper sub-diagnosis should be, for example, psychogenic vomiting, psychogenic gait disturbance, psychogenic speech defect, or psychogenically fixed radial palsy, respectively."

The ninth report, of August 1944 (Appendix 1, No. 35), opened with a note on cerebral arterio-sclerosis. It stated that recently an increasing number of older men, usually about 50 years of age, who had a number of non-characteristic complaints or symptoms of fatigue, were being suspected of malingering or aggravation, and subsequently were roughly handled. If they finally succeeded, usually after an attempt at suicide, in being admitted to a hospital, examination often revealed the existence of a significant degree of arterio-sclerosis in these patients. Consideration was to be given to the fact that such men, if overburdened by stress or work, broke down completely after a short time, while under conditions of a moderate load they could remain useful for long periods. The report also described cases of cysticerosis of the brain, of paroxysmal paralysis, and a case of muscular atrophy of the leg caused by thrombosis of the femoral artery. The report also contained an extensive discussion of narcolepsy with or without associated catapletic symptoms. It is of interest that the Chief Consultant came to the conclusion that a diagnosis of narcolepsy always constitutes permanent unfitness for the military service.

This report stated that an extraordinary increase of post-diphtheric polyneuritides had occurred. Post-diphtheric polyneuritides constituted 3.63% of all admissions to the neuropsychiatric center in Schwerin, and in several centers, that at Schwerin included, the total number was twice that of the polyneuritides of all other etiologies combined. Good results were reported with the treatment of post-diphtheric polyneuritides by malaria and artificial fever (pyrifer). A special chapter dealt with the increase of neuropsychiatric complications of Wolhynian fever. Among these complications were myalgic complaints, cranial nerve symptoms, especially pupillary changes and nystagmus, pyramidal signs, weakness of the lower extremities, and brain stem symptoms, including muscular rigidity, masked and oily facies, sleep disturbance and causalgic, polyneuritic and polyradiculitic symptoms. Sleep disturbances reminiscent of the prolonged sleep of epidemic encephalitis was observed in four cases of trichinosis of the brain.

The treatment of causalgia was rediscussed. The results obtained with sympathetic ganglionectomy or sympathectomy were considered far superior to those of any other treatment, although the importance of accurate diagnostic differention, especially from traumatic neuritides, was stressed. Cases of injury to the ulnar nerve in telephone operators due to stretching of, and

pressure on the nerve caused by supporting the elbow on a table, were reported and headsets for soldiers assigned as telephone operators were recommended.

The chapter on psychogenic disturbances included an historically important note by Kleist. Kleist stated that the treatment of psychogenic disturbances with strong galvanic currents which was carried out by Stabsarzt Dr. Gerum in his corps area had in the past led to cures in 89.6% of the patients, 46% of whom were discharged as fit for combat duty, 39.6% as fit for limited duty, after two or three treatments in the majority of cases. Dr. Kleist went on to say that the treatment in the past had always created a favorable psychic atmosphere which expressed itself repeatedly in spontaneous cures upon mere admission to the ward before application of the electric current itself. Also in the past, patients not cured during the first session, themselves asked for a repetition of the treatment. Furthermore, presumably due to the cured patients spreading the news of the good results among their relatives and friends, private individuals suffering from nervous disorders had come and asked for "the treatment". The subsequent occupational therapy, especially in cooperation with armament factories, likewise played a great role in giving support to the results of the treatment. Recently, however, results have been becoming less good. Dr. Kleist felt that this was probably due to the fact that there had been an increasing number of "hysteric patients of poor character and malevolent personality", who not only did not benefit from the treatment themselves, but also had an adverse effect in influencing public opinion on the wards against the treatment. Characteristic of this "unfortunate situation" was the fact that one day recently the apparatus used for the treatment had been sabotaged and a number of essential parts removed and hidden. On the following day, however, while the perpetrators were not yet found, the missing parts were discovered in front of the door of the treatment room. Kleist made the significant statement that "until now such unpleasant occurrences have been only sporadic".

Another interesting note in regard to psychogenic disorders dealt with the disturbances in potency among soldiers on furlough from the Russian front. The problem had been increasing and special consultation centers for that complaint had been established, such as the one in the Gau Westfalen-Nord. The patients usually came to these centers with the complaint of fear of sterility. The Chief Neuropsychiatric consultant objected that at most of these special consultation stations for so-called "sterility",

a gynecologist and a dermatologist are available, but no psychiatrist. He stated in his report that "our medical men think too much of the organic and forget that man also still has a soul". The complaint is to be considered as predominantly psychic.

Carl Schneider warns against the careless diagnosis of "psychogenic complaint" because numerous cases of myelitis, typhus, tuberculosis, and cancer of the lungs had been diagnosed as psychogenic complaints. He stressed the fact that psychogenic disturbance should not be diagnosed by exclusion only. He added interesting observations in cases in which the differential diagnosis of sympathogenic and psychogenic contractures and trophic changes of the limbs was made only with great difficulty, and he stressed that such contractures may be psychogenic although there may be no other overt manifestations of a psychic disturbance. He told of a case in which a very severe contracture which developed after a palsy of the leg due to typhus, had been completely cured by treatment with strong galvanic current. The diagnosis of a psychogenic contracture in this case was particularly difficult because the contracture had persisted under very deep anaesthesia. He suggested that the treatments with strong galvanic current be spaced at 8-day intervals.

In the chapter on medico-legal matters, there was an interesting statement concerning the fact that time and again soldiers who had been sterilized for mental reasons during civilian life, have come before courts-martial, in spite of the many directives for rejection and discharge of such patients from the army. An interesting observation was the fact that a good many of these sterilized people, especially those sterilized for mental deficiency, had been doing well in the army, usually up to such time when they were promoted and given added responsibility. A 39-year old enlisted man, an engineer in civilian life, had been treated for a severe querulous-paranoid schizophrenia in civilian life, but was court-martialed six times because of disobedience and obstreperousness, until his true condition was rediscovered.

Von Baeyer reported that the increasing number of very young soldiers placed new difficulties before the army psychiatrist because he was suddenly faced with military offenses which were actually nothing but the normal manifestations of puberty, including pranks, such as were commonplace in schools and could easily be handled by a teacher with disciplinary means, but which, in the setting of the army, tended to look like more serious

misbehavior. He mentioned especially the unauthorized wearing of badges and decorations by 15½-year olds, being AWOL, inconsiderate remarks, white lies, etc. He concluded "they are so young that the experiences hitherto made with juvenile soldiers are not sufficient to provide the basis for proper action".

The last report, issued in December 1944 (Appendix 1, No. 36), dealt extensively with psychogenic disturbances. Schizophreniform reactions of short duration were described and interpreted as the expression of latent schizophrenic reaction patterns which were brought to manifestation by physical hardships, stress, heat, infectious diseases, injuries, imprisonment, etc.

The German miraculous cure-all, namely the treatment with strong painful galvanic currents, appeared to have suffered a severe breakdown at this point. Mauz reported that because of the great increase of psychogenic paralyses which swamped his treatment center, he saw himself forced to resort to ambulatory treatment with strong galvanic currents instead of dispensing it exclusively to in-patients. To his surprise, however, it turned out that the ambulatory treatment was a complete failure. The emotional reactions of the patients to the treatment became increasingly poor. The soldiers complained about the treatment and assumed a definitely hostile attitude. This finding was in complete contrast to his previous experiences with "in-patient" treatment. This complete failure of the ambulatory application of electro-suggestive treatment was considered as due to two factors: firstly, the therapeutic atmosphere of the ward in which the patient used to reside for 2 - 3 days before the treatment, was absent. Mauz felt that the association of the new patient with cured cases during this preparatory period brought him into a state of therapeutically positive expectant tension which made it possible for the patient to be cured practically at the beginning of the electro-suggestive treatment. The second factor was that the equally important after-treatment was also missing. This after-treatment consisted in arranging that the patient's elated feeling of happiness after a successful cure was immediately shared by the doctors, the nurses and the fellow patients in the ward, and was frequently reiterated during the following days by demonstrating and exercising the restored functions, and by giving the stamp of legality and normality to the completion of the cure. This great experience of restoration of function which pervaded the whole community of the ward, and the strength and conviction of the simplicity, the durability and the inescapability of the cure, which after the cure continued

to grow from day to day, were decisive factors in securing and preserving the excellent results obtained by the "in-patient" treatment. Because of the vast difference in results achieved by the "out-patient" treatment, as compared to the previous results with "in-patient" treatment, all out-patient treatment of electro-suggestive type was discontinued completely.

Another author, Klaubert, reported good results in the treatment of 113 cases of psychogenic bladder disturbances, including enuresis, with electro-suggestive treatment. 40-60 milliamperes were used, and in 98% of the patients the cure was perfect after the first treatment. The cases included one of psychogenic weakness of the bladder which followed a penetrating gunshot wound with impacted missile in the shaft of the penis. This patient recovered after six sessions of the treatment. It is stated that the cure had to be fortified morally and physically by sport and drill.

A chapter on epilepsy reported acute fatigue from loss of sleep as eliciting the manifestation of epileptic fits in people who had no such fits under other conditions.

Several cases of cysticercosis of the brain were described. It is stated that an increasing number of gunshot wounds of the head occured because an increasing number of soldiers failed to wear steel helmets. In regard to subdural haematoma, it was stated that a good diagnostic hint as to the location of the haemorrhage was provided by the fact that dilatation of the pupil (mydriasis) was usually on the side of the haemorrhage. Several cases of blast injury of the brain were studied. Only one showed positive spinal fluid findings, namely, increase of pressure and protein, and slight increase of cells, 10 per cmm. Three cases of indirect injury of the brain following gunshot wounds of the neck were reported, two of them due to traumatic aneurysm of the carotid artery, one of them without clinical evidence of an arterial lesion. Another report concerned the fact that following severe infectious diseases such as malaria, dysentery, Wolhynian fever, or paratyphoid fever, neurological signs and symptoms of all post-traumatic (post-concussional or post-contusional) disorders may become reexacerbated. A special chapter dealt with the encephalomyelitides following inoculations, including T.A.B. and cholera inoculations. Another chapter mentioned polyneuritides following treatment with sulfonamides, especially Italian sulfonamides, and arsphenamine. It was urged again not to perform re-operations in cases of peripheral nerve injury until four months have elapsed after the injury. Paravertebral injections were considered useful in ischialgias, but care should be taken not to fail to recognize a psychogenic pseudo-sciatica.

In the section on medico-legal cases, Stauder reported that the various punishment formations, including the special field formations, contained a significant number of victims of the formes frustes of infantile paralysis, with athetoid movements, varying degrees of atrophy, and pathologic associated movements.

An interesting report was one by Von Baeyer concerning the increasing occurrence of trials for "corrosion of the armed forces", and for "spread of discontent in the army" on the Eastern front. Von Baeyer said that "these crimes are even today still relatively rare". He considered most of the perpetrators of these crimes as odd, sometimes fanatical, psychopaths. They were considered legally responsible, but psychiatric testimony was helpful in "revealing the characterological roots" of the odd ideational contents to the courts, and to recommend a mitigation of judgment in view of the constitutional personality deficiences of these individuals. The description of the various crimes is interesting in that they indicate early cracks in the morale of the German army in the East. One 36-year old medical officer who had been decorated for bravery in the field with the EKl, stated that he would not retreat with the rest of the army but would stay on and attempt to convert the Russians to National Socialism. For this purpose he had already prepared insignia depicting the Soviet star white on a red background. He felt he was qualified to do so because he felt related to the Romanoffs through his own Norman ancestors. This man had always been considered queer. He had a long standing interest in astrology, and had at one time wanted to become a missionary. He was declared legally sane and sentenced to three years in prison and to loss of rank for "corrosion of the army." However, higher authority considered that his psychopathy had "the validity of disease" and reduced the sentence, in conformity with paragraph 51, Section 2.

A 25-year old non-commissioned officer one day declared that he would no longer fight against the Russians because if he did so he would have to shoot at his father and brothers. He stated that he was the son of a former Russian prisoner-of-war in Germany during the last war, a fact which appeared quite credible as his nickname in his home village had been "Russ" for that reason, and because he actually looked Russian; but the odd thing was that he had not mentioned this fact before, and apparently had not been disturbed by it. He likewise was an odd personality who spent his free time constructing a perpetuum mobile (non-stop machine). However, he was considered legally sane.

In addition, there were a number of perfectly normal people who committed similar offenses. Among them was a 47-year old Colonel with an excellent combat record, who suddenly started to talk in a pessimistic manner about the war situation and expressed his opinion that capitulation was unavoidable. He tried to make arrangements to create a small guerilla band among his officers for the purpose of hiding in the Russian woods for at least two years, and then fighting his way back into Germany gradually in guerilla fashion. He was condemned to 5 years imprisonment for taking a pessimistic view of the situation and for exerting an unfavorable influence over his officers, but without questioning his honorable intentions.

A 28-year old soldier made critical remarks about the Nazi party and the German State, and announced that he would either kill himself or desert to the Russians. This man was considered as a moody individual, with an abnormal need for recognition, partly motivated by dissatisfaction due to lack of promotion. He was considered sane, but the psychological root of his moods was explained to the court.

Another individual who had always been depressive, did not take much part in group activity and always sang sad songs, made statements that he would give himself up to the Russians when they made their next break through. He was considered a fearful, sensitive, and depressive personality who should never have been sent to the front, and he thus escaped the death penalty.

A final small chapter deals with the interpretation of the new regulations concerning the finding of "inclination" in cases of homosexuality.

Of equal interest are the various reports of the meetings of the consulting physicians of the various specialties. A report of the third annual meeting (Appendix 1, No. 37) contains interesting chapters on hysteria and malingering, with special consideration of psychogenic overlay in organic diseases, by Panse (Pages 217-219, with discussion and directives). There is a report on the malaria treatment of post-diphtheric palsies by Fuchs (pages 225-227), as well as an interesting chapter on malingering and hysteria with special reference to visual disturbances by Collin. (pages 33-34).

2. Information obtained from Professor Dr. Kurt Schneider, Oberstarzt (Colonel) in the German Army Medical Corps, who served as Consulting Psychiatrist with various armies in the field, on active war fronts in Poland, France and Russia.

Dr. Schneider was interviewed on 28 May 1945, at the Schwabinger Krankenhaus in Munich, where he is in charge of Clinical Psychiatry, as the senior member of the Psychiatric Section of the Deutsche Forschungsanstalt für Psychiatrie. The Army had returned him to inactive reserve status to his civilian work, one year ago.

Dr. Schneider was first asked about selection. He stated that no neuropsychiatrists took part in the medical examinations of soldiers about to be inducted into the German Army. These examinations were performed entirely by general medical men, who did not recognize or weed out any but the grossest neuropsychiatric disorders. In such cases they could arrange for neuropsychiatric examination through the Standortarzt at neuropsychiatric outpatient departments of nearby military hospitals. Even there standards varied a great deal as the war progressed. A severely psychopathic personality, who might have been rejected in 1939, was definitely accepted in 1945. Before the war, psychiatric-psychological selection was practiced in the case of officer candidates, and candidates for the civil service only, but never in the case of enlisted personnel of the Army. At the beginning of the war, even the psychiatric-psychological examination for officers and civil service officials was abolished "at the stroke of a peh." Before the war, this examination had consisted of a half hour's interview; the examiner inquired about the candidate's interests and why he wanted to become an officer. "Soft people, people with an excessive need for recognition, or people who lacked power of decision, were eliminated." During the war as well as before, newly conscripted men were well observed during the first 14 days of their service, and those who "aroused attention" were sent to special examination centers, usually the neuropsychiatric outpatient department of the nearest military hospital, for expert opinion. Most of the neurotics used to report sick three days after their induction. All military hospitals had outpatient departments, including facilities for psychiatric consultation. Each army at the front had a number of medical and surgical consultants attached to it: usually 3 surgeons, 1 hygienist, 1 internal medical man, 1 pathologist, and 1 neuropsychiatrist; later also an eye- and an ear-nose- and throat man were added. A German Army was usually composed of 12 to 25 Divisions of up to 5000 men each; most armies numbered 60,000, including officers. In addition to the

neuropsychiatric consultant, every Army had one or two junior neuropsychiatrists at its disposal, who ran the neuropsychiatric service, including wards and outpatient facilities, of the field hospital attached to that particular army. The number of active cases occupying neuropsychiatric ward beds at the same time was usually 80. Half of them were usually organic cases, such as postconcussional disorders, multiple sclerosis, or tabes. One fourth of them were usually occupied by psychoses. The "abnormal reactions", including the exhaustion states, the psychopaths and the true neurotics occupied the other fourth of the beds; the "true neurotics" usually occupied 5 of the 20 beds occupied by the "abnormal reactions". Dr. Schneider went on to say that the number of neurotics in German armies at the front in this war was much less than in the last war. Further interrogation, however, brought out the fact that the psychosomatic disorders in patients who showed no other obvious signs of emotional distress and the postconcussional headache states were not included under the diagnostic category of neurosis. As to the treatment in Army organization and field hospitals under his jurisdiction, Dr. Schneider states that the best prophylactic measure was a good encouraging talk by the regimental surgeon; it was not psychotherapy, just encouragement. In field hospitals, exhaustion states were allowed to rest, preferably without the use of sedatives. Neurotics needed no active treatment either; most of them pulled themselves up by their own bootstraps after a little time, as long as they were at or near the front. At home things were more difficult to handle, because there "all the neurotics evacuated from the war fronts accumulated." Therefore psychopaths and neurotics were whenever possible not evacuated from the fronts, but, if necessary, transferred from combat units to quartermaster units at the same front instead. Those who had to be evacuated to hospitals in the Zone of the Interior, were there treated with painful electric currents "as in the last war". This time strong galvanic currents were used, according to Panse's modification of the old "Kauffmann treatment". The line of duty in cases of neurosis was always "no", and the patients were not discharged from the Army either, since neurosis was not recognized as a disabling condition for which discharge from the military service was authorized. However, no disciplinary measures were used, the handling was entirely medical. There were no "malingerers": "How can one separate the psychogenic from the demonstrative?"

"Of course we have asked ourselves how does it happen in this war that we saw only about 1% of the number of neurotics that we saw in the last war. One school of thought was that in this war the neuroses were for the most part

"masked" (getarnt), in that they appeared in the form of gastric (especially ulcus-like), or circulatory symptoms, without showing any obvious signs of emotional distress or disturbance. But that does not solve the whole problem. My opinion is this: in the last war we had two theories about neurosis, (1) a psychogenic theory, and (2) an organic theory, such as for instance Oppenheim's idea about a cerebral molecular disturbance due to "shell shock". In this war a united medical front against neurosis was formed from the very beginning." This united front included all medical echelons, beginning with the regimental surgeon. It expressed itself most effectively in the prophylactic activity performed by the regimental surgeon, who could nip neuroses in the bud by encouragement and by controlling evacuation to the rear.

Cases of self-inflicted wounds were not considered neuropsychiatric problems, but purely legal ones. They were tried and usually condemned to death, but the death penalty was rarely executed, and the culprit was usually allowed to "redeem himself in combat". "This was due to a clever and modern administration of justice." The judicial principle was "to penalize the deed and not the one who happened to commit it". If he was otherwise a decent fellow, who just happened to run away or to shoot at himself in a state of anxiety or of panicky fear, he did not even go to prison but was already back with his outfit after a week and was handed a gun "to redeem himself." Dr. Schneider added: "Military justice was the only clean and honest justice in Germany since the Third Reich." This was in stark contrast to German civilian justice, which had become completely corrupt under the Nazis. "Ranking Nazi Party members and members of the S. S. of all ranks could do as they pleased, as far as the civilian courts were concerned." Dr. Schneider himself did a great deal of work as psychiatric expert to courts-martial in France, where both German military offenders and French civilian offenders were tried by military courts, and in Russia, whereonly German military personnel was tried by Army Courts-martial. Of French civilians whom he declared legally insane, he remembers a schizophrenic who fired some shots at a German soldier, and a senile indiviaual who committed acts of sabotage by cutting cables. German military personnel served only their briefer prison terms in military prisons; those condemned to long prison terms were at the same time declared "unworthy to bear arms" ("Wehrunwürdigkeit") and handed over to the civilian police for transfer to civilian penitentiaries ("Zuchthäuser") where they were to serve their terms. Confirmed homosexuals were likewise disposed of in this way. The final decision

concerning "unworthiness to bear arms" was passed by the Judge Advocate's Department of the supreme command of the Wehrmacht. Dr. Schneider does not recall any trials for rape; but he recalls the case of a SA-Führer who was condemned to several years "Zuchthaus" for "racial disgrace" ("Rassenschande") in Poland.

Cases of suicide "were always very numerous", in the Army as well as in the civilian population. When asked what "very numerous" meant, Dr. Schneider could not recall any figures concerning incidence among given numbers of population, but he stated that 700 civilian cases of serious attempted suicide passed through his 80-bed Neuropsychiatric Service at the Schwabinger Krankenhaus in Munich during the past 5 years. In the Army, cases of suicide increased during the lull after the battle of France. Dr. Schneider thinks that relaxation of discipline and excessive drinking were the main causes contributing to this increase during that period. For exact figures and statistics he referred to the files in the Surgeon General's Department (Wehrmachts-Sanitätsinspektion) which kept special statistics on suicides.

As to the practical handling and disposition of the neurotics, the main point according to Dr. Schneider was their clinical separation into those of good will ("Gutwillige") and those of essentially malevolent attitude ("Böswillige"). It was an assay of moral attitude, and the "benevolent" were not necessarily "benign" in the clinical sense of the word, because although they tended to improve, they were subject to frequent relapses. The thing to do was to find the proper assignment that would exert the proper amount of pressure which they were constitutionally capable of bearing and under which they were capable of performing. The main effort was directed to finding and, if necessary, creating the proper environment for the soldier with neuropsychiatric limitations. Psychotherapy was not used in the German Army, in contrast to the air force, where psychotherapy was an authorized part of the neuropsychiatric rehabilitation procedure, usually administered by lay therapists who had been trained in Professor Göring's Psychotherapeutic Institute in Berlin (the form Psychoanalytic Institute).

When Dr. Schneider was asked about abreaction treatments, he stated that he had never heard of such a thing. When he was told that it was initiated by the slow administration of a barbiturate, he stated he was on principle opposed to the use of barbiturates, especially intravenously administered. So far as he knew intravenous barbiturates had been used in Germany only in psychotics, especially

schizophrenics. Insulin shock treatment was likewise limited to schizophrenics. Dr. Schneider had never heard of insulin subshock treatment.

Dr. Schneider was then asked whether he was familiar with a clinical condition manifested by anxious tension, sleep disturbance, loss of appetite, vague gastric complaints without positive X-ray findings, and weight loss of about 14 lbs. Dr. Schneider replied: "I would not consider that condition psychogenic, when it is associated with weight loss." This led to a discussion of psychosomatic illnesses in general. Dr. Schneider took the view that it was by no means proven that the functional illnesses of the gastro-intestinal tract or the cardiovascular system which now tend to be referred to as "psychosomatic" are actually caused by psychological or emotional factors, but that on the contrary, such functional illnesses, in view of the discomfort which they cause to the patient, may actually be the source and the cause of a certain amount of psychological discomfort and emotional upset. He definitely disagreed with Siebeck and other internists who look upon these functional illnesses as definitely and necessarily psychogenic. While the scientific merits of the point could still be argued, he felt that this new viewpoint, whatever its scientific merits, was not yet well enough proven to serve as the basis of practical military-medical procedure. Therefore he has always resisted the efforts of the internists to shove those patients off to the psychiatrist. "Whenever such patients were sent to me for consultation, and I found that they were not definitely psychopathic personalities, and if they did not express an urgent wish to go home or to get out of combat, I have always sent them back to the internists, where they belonged." It became quite obvious from our conversation that Dr. Schneider did not accept any patients with functional gastric or circulatory complaints as neuropsychiatric problems, as long as they gave lip service to, or expressed an actual conscious desire of staying at the battle front. I then asked Dr. Schneider what the internists did with those patients after he sent them back to them, and he replied: "Well, those people finally were always sent home one way or another. They were a considerable group. It was the same problem with the postconcussional disorders. We had people who could not wear steel helmets, because of some accident they had in civilian life or in the Army. They were difficult to evaluate. I always hesitated to make the diagnosis of neurosis in order not to do the man an injustice. The term neurosis implied the stamp of moral disapproval." Thus, the diagnosis neurosis was in most cases

not made unless the psychiatrist felt that the man was morally objectionable, or otherwise definitely substandard, or overtly emotionally upset; although Dr. Schneider personally felt that the moralizing attitude was quite wrong, and did his best to change it by teaching and writing.

Dr. Schneider's constitutional bias which pervades his book, even its most recent edition (Appendix, No. 3) did not completely blind him to the importance of external events in producing abnormal mental states, or in modifying and coloring abnormal mental states not primarily caused by such events. He discussed these problems in an interesting paper on "The differential diagnosis between schizophrenic psychoses and experiential reactions under combat conditions" (Appendix 2, No. 1). "I already saw one such case during the Polish campaign, and then an increasing number of such cases in France and at the Russian front, in which a definite differential diagnosis, at first at least, was impossible." He feels that as far as the contents of the abnormal mental states are concerned, battle contents not only fill the utterances of the patients suffering from psychogenic battle reactions, but also those of the schizophrenics and those suffering from organic mental disturbances, such as those caused by infections, toxic states and head injuries, all of which are much richer in symptoms and in expressions of terrifying experiences than their counterparts in civilian life. The dreams of the normal frontline soldier are already more vivid and filled with war content; restless sleep with nightmare-like dreams in which soldiers jump up and grab a gun are not infrequent and may in themselves sometimes constitute the sole cause of admission to a field hospital. However, not only the psychogenic battle reactions, but all other abnormal mental states are also filled with the terrifying battle and danger contents of war; and since everybody is experiencing special events, it is frequently difficult to decide whether a particular soldier was merely experiencing something that everybody else was experiencing too, or whether he was exposed to <u>very</u> special experiences. Among these "<u>very</u> special experiences" causing psychogenic battle reactions Dr. Schneider enumerates: severe losses among immediate comrades, narrow escapes, being cut off, or unusually terrorizing or grinding bombardment by dive bombers or by the "Stalin organ" (presumably mortar type rocket shells fired from multiple rocket launchers). Nevertheless, all abnormal mental states, irrespective of etiology, have certain traits in common under combat conditions; they all show anxious excitation and confusion, anxiety, misrecognition of persons, talk about the enemy and

attacks, attempt to get away, grab guns, threaten or attack those about them. There may be a peculiar solemn tension, or apathetic stupor, or Ganser-like syndromes with talking beside the point, mannerisms or seemingly demonstrative tearing of clothes or smashing of objects. They all showed an apprehensive misinterpretation of their environment, saw enemies, or heard shots being fired. Outbursts of anxiety alternated with sudden outbursts of exaltation or with empty apathy. One frequently had the impression of a clouding of consciousness or of twilight states, even if no drugs were used. There is either a deterioration or a stiffening up of military attitude. Dr. Schneider feels however, that even in this setting which gives a new battle coloring to all kinds of mental abnormalities, there are certain symptoms which are indicative to schizophrenia, and which he calls schizophrenic symptoms of first order. They are: hearing one's own thoughts, hearing of voices in the form of complete conversations with answers, voices which accompany the soldier's actions with comments, feeling of physical "influences", withdrawing and instilling of thoughts, and the experiencing of feelings, impulses and desires "made" by others. But Dr. Schneider stresses the fact that it is the more common error to diagnose schizophrenia too often, rather than not often enough; and that he himself has mistaken anxious-confused mental states for cases of schizophrenia, which later turned out to be mere psychogenic experiential reactions (battle reactions). Dr. Schneider is against the use of drugs in these conditions, especially if given by injection, because a number of deaths have been caused by overdosage or by excessive repetition of administration of sedatives. He feels that if restraint is necessary, the use of physical means, such as by restraint jackets, tends to be less harmful. Dr. Schneider concludes his paper with a plea not to condemn these people in a moralizing manner; "In conclusion I should like to advise, not to moralize in regard to the abnormal experiential reactions. I have hardly ever seen purposeful reactions of this type at the front. Also the best and bravest can react in an abnormal manner under the stress of a certain weight of experiences. Combat soldiers know that, and therefore such occurrences have been dealt with with remarkable understanding in field outfits. Everyone there has the dim feeling that he himself is also not quite sure of becoming likewise afflicted, that such a thing could happen to him too some day."

In an interesting paper entitled "The neuroses from the point of view of clinical psychiatry" (Appendix 2, No. 2) Dr. Schneider complains that the term neurosis is being

used too glibly and too all-inclusively by internists, pediatricians and psychotherapists than would appear justified from the standpoint of clinical psychiatry. He particularly opposes Siebeck's inclusion of those functional disturbances of inner organs which he designates as psychosomatic without being able to prove their actual psychic origin; although Dr. Schneider admits that such functional disturbances may occasionally be elaborated on in a neurotic manner by certain neurotic or psychopathic personalities. This, however, does not prove that the functional physical disturbance actually had a psychic origin even in these cases. He would like to limit the term neurosis and synonymous or associated terms to those disorders whose psychic origin can actually be proven. He suggests the following diagnostic categories: (1) Psychic syndromes: a. abnormal reactions to external experiences or events, b. reactions to inner conflicts (inner tensions, struggles, drives, etc.). (2) Physical syndromes: a. organ neuroses, b. "animalistic" neuroses such as psychogenic trembling, stuttering, psychogenic palsies, speech disturbances, sensory disturbances, etc., "which were seen in the last war by the thousands and which we again today see in moderate numbers". But Schneider urged that the diagnosis of "psychogenic physical syndromes" be limited strictly to those in which it is proven that they originated and were fixed by purely and definitely psychic mechanisms. Dr. Schneider states that although among the soldiers who develop psychogenic physical syndromes there are a good many who are psychopathic personalities, asthenics or hypochondriac self observers, by no means all of them, not even those with "animalistic neurotic reactions" are psychopathic inferiors, because even animalistic neuroses may develop in soldiers with previously good personalities. He cites two cases as examples. One of them is that of a sharpshooter who for weeks on end spent every day in a burnt-out Russian tank in no-man's-land. From this position he picked off Russian officers; after a direct hit on the tank which did not injure him physically, he developed tremors and stuttering. "It would have been entirely unjustified to say that this man was a psychopath." The other case is that of a 22 year old non-com, who during a shock troop attack, which he led, lost all his men, and who reacted to this event with a tremor-neurosis in which he brooded over the thought that he had caused the death of his comrades by uncautious leadership.

The fact that Dr. Schneider's general views were motivated less by therapeutic considerations, but more by considerations of fairness in administrative disposition and of fair veteran's administration policies is quite

obvious, and he expressed it quite strikingly in the concluding sentences of his paper: "Let me conclude my remarks as a defense counsel makes his final plea at a criminal trial: I herewith move that my clients be acquitted of the crime of neurosis. If you should not be able to decide upon an acquittal, then please, consider my explanations and grant mitigating circumstances in the use of the term neurosis. In other words, I move that the term neurosis be strictly limited to those functional disturbances which have originated through purely psychic mechanisms and which have remained fixed by purely psychic means."

3. Information obtained from Oberstabsarzt Dr. Ludwig Hochapfel, who served as assistant to the Chief Consulting Neuropsychiatrist at the Militärärztliche Akademie in Berlin from August 1943 until April 1945, then as Chief of the Neuropsychiatric Service at the Reservelazarett in Tutzing, Bavaria.

Dr. Hochapfel, who is a medical officer in the regular German Army, was very cooperative, and had a very intimate knowledge of regulations and policies, and of their development and application. The bulk of official documents, reported on in the first chapter of this report, was found in his office and was discussed with him in detail. Dr. Hochapfel gave the following additional personal information: The Chief Neuropsychiatric Consultants of the three main branches of the armed forces were directly under the "Chef des Wehrmachts-Sanitätswesens", who was General-Oberstabsarzt Dr. Handloser. The Chief Neuropsychiatric Consultant for the Army was, from the beginning of the war until October 1944 Professor Kuth; he was then succeeded by Professor de Crinis of Berlin. The Chief Neuropsychiatric Consultant for the German Navy was Professor Kreuzfeld of Kiel, and the Chief Neuropsychiatric Consultant for the Luftwaffe was Professor Luxenburger.

The greatest single neuropsychiatric problem and one of the most important problems in Army medicine in General, were the psychopaths. This diagnostic category included the psychogenic emotional disturbances previously called neuroses, as well as the psychogenic physical disturbances, which included particularly the hysterias. It did not include the organ-neuroses (stomach and circulatory neuroses), or psychosomatic disorders. The latter groups were exclusively treated by internal medical men, and were not regarded as falling into the province of neuropsychiatric practice.

The methods of neuropsychiatric treatment were fundamentally different in the Army and in the Luftwaffe. The Luftwaffe relied mainly on psychotherapy. In the Army, however, the treatment of choice was "electro-suggestive therapy", which had been developed by Dr. Panse in Berlin. This treatment was similar to the old Kauffman treatment, which had been used in the last war, but the creation of the "suggestive milieu" was better. It was the policy, if possible, to keep the hysteric patients who were treated, on the same wards which were also used for patients suffering from severe organic nervous and mental disorders. Particular care was taken not to treat the patients as if they were "gold-bricks", but as sick patients. Particularly frequent among the patients which were selected for the electro-suggestive treatment were patients with psychogenic palsy of an arm or leg; but cases of enuresis also responded well to this treatment, especially at a special electric treatment center for bed-wetters which had been organized at Rodewisch in Saxony. The disposition of the cured patients was usually to limited service. The internists likewise discharged the improved psychosomatic cases to limited servoce. There were special formations for specific kinds of disability, af which the best known were the "stomach battalions" which constituted a considerable portion of the troops of occupation used in France. The soldiers in these battalions received a special diet and whenever possible the commanding officer of such a battalion was chosen from among medical officers familiar with gastric diseases.

Dr. Hochapfel feels that the handling and utilization of these partly disabled individuals in the German Army worked very well, and that the solution of the creation of a special environment in which a specific group of specifically disabled people could function, was a success. He feels that the Air Force did not do so well with its personnel because its discipline was corroded, and because corruption and alcoholism were rampant in the Luftwaffe. He feels that this was due to the fact that the Luftwaffe people were given too many special privileges. (This criticism should not be taken too seriously, since it seems to be the standard type of criticism made of an airforce in any country by members of its non-flying brother services).

Dr. Hochapfel then explained the principles of diagnosis and determination of duty status already discussed in Chapter 1. The main diagnostic categories among the functional nervous deviations and illnesses were those with vegetative abnormalities, and those with psychic abnormalities. Mild cases in either group could be classified as fit for combat duty, such as Group A15 - 1 and A15-3 of the diagnostic schema, while the more severe cases such as L15 - 1 were classified for limited service. However, more important than those diagnostic categories was the basic appraisal of fundamental attitude which was utilized in dividing patients into two major groups. Those who did not want to perform were classified "disturbers", and those who could not perform, "folder-uppers".

There was no discharge from the German Army for neuropsychiatric reasons except into concentration camps or into a State Hospital for the Insane; the former for "disturbers", and the latter for those who "folded up". Even before the war soldiers who were found to be inadaptable for reasons of asocial tendencies were put into concentration camps. During the war, transfer to concentration camps was not immediate, but such individuals were first assigned to special formations which were assigned to especially dangerous work such as digging up mine fields or similar arduous and dangereus operations which did not require too much individual initiative. Dr. Hochapfel stated that he did not know how well these formations actually performed, except that "sub finem belli"men in these formations began to run away and desert in considerable numbers. There were "special formations" called "Sonderabteilungen des Ersatzheeres", for soldiers who had not yet completed their basic training, and special formations for soldiers whose behavior difficulties did not begin or were not discovered, until after they had their basic training, or who became inadaptable during front-line service. These were called "Feldsonderbatallione". These were the battalions which performed especially dangerous and arduous missions in the front-lines, such as removing mines, and so forth. The soldiers nicknamed them "Heaven-Commandos" ("Himmelfahrtskommandos"). These included criminals on probation, who were thus given a chance to redeem themselves. The numbers of soldiers in these special battalions was not known to Dr.Hochapfel or to any medical echelon, because transfers to these formations were a purely administrative matter, although the Regimental Surgeon had to pass candidates as physically fit before the transfer. Any soldier who incurred frequent punishment for AWOL, drunkenness, refusal of duty --- in other words, any soldier who was an educational or administrative problem, became eligible for transfer to these battalions. As officers and non-commissioned officers for these battalions, especially tough people were selected, preferably such officers and non-commissioned officers who had some SS training and indoctrination, i.e. "ex SS executioners" ("frühere SS - Henkersknechte").

Dr. Hochapfel was then asked whether he knew anything about the incidence of neuroses and psychopathy in the German Army, and whether he knew anything about the numbers of relapses following electro-suggestive therapy. Dr. Hochapfel stated that he did not know figures which included all periods of the war, but that he had a set of figures which resulted from a survey made in October 1944.According to this survey, during the month of October 1944, the number of patients with psychogenic illnesses in all Germah Army hospitals at the time, numbered 2432, of which 2103 were first admissions, the rest recurrences. Dr. Hochapfel stated that this figure, of course, did not include those diagnosed as psychopaths or characteropaths, and that it likewise did not include those diagnosed as psychosomatic illnesses, organ neuroses, gastric or cardiac neuroses, etc., since the latter were never taken to the psychiatrists.

Dr. Hochapfel had heard from internists that in addition to the psychosomatic group there had been a marked increase of real cases of Graves' disease, in spite of the fact that only those who had basic metabolic rates above + 30 were diagnosed as Graves' disease.

Of outstanding large neuro-psychiatric hospitals, Dr. Hochapfel mentioned the neuro-psychiatric center headed by Professor Mauz in Königsberg (1000 beds), the special center for bed-wetters at Rodewisch (1000 beds), and the neuro-psychiatric center in Vienna, which specialized in work therapy and re-integration of neuro-psychiatric casualties into labor services and industries. These people who performed labor duty in industry still retained their enlisted status in the Army, which the patients tended to like, because it gave them certain special privileges and immunities enjoyed only by members of the armed forces.

A special problem were the homosexuals. The estimate as to their number throughout Germany varied. The minimum estimate was two million, and the maximum estimate four million, among the German male population of mature age. During the war 5806 homosexuals were tried and convicted by Army court-martials, and turned over to civilian prisons for long prison terms. In SS formations homosexuality was punished by death. The Luftwaffe, on the other hand, was very lenient, and regarded homosexuals as a medical problem which was handled by psycho-therapy, performed by lay therapists especially trained at the Psychotherapeutic Institute of Professor Göring in Berlin. Professor Göring took an essentially psycho-analytic view. In the Army the policy was to regard homosexuality as a legal and administrative, not as a medical problem. Court martials usually after conviction sentenced a homosexual to two to six years in a civilian prison. After serving the full prison sentence, he was subjected to sterilization or castration, and dishonorably discharged from the service. Confirmed homosexuals were never regarded as worthy of a chance to redeem themselves by participating in dangerous combat missions in special formations, except in cases of incidental homosexuality, especially if due to seduction, in cases of first offenses only. Dr. Hochapfel added that there was a constant pressure from higher authorities, especially Himmler and Hitler himself, to make the death penalty mandatory for homosexuality in the Army. The Army legal authorities resisted for a long time, but finally did make the concession to authorize the death panalty in cases of "incorrigible inclination", but not in the case of incidental offenders, or offenders considered victims of seduction. The differentiation of these groups became for a time the duty of the medical court expert, who tended to shift emphasis away from the "incorrigible inclination", and especially adjudged many offenses as having been committed during "pathological intoxication", which abolished criminal responsibility in regard to the offense. However, later Hitler himself cracked down on that practice, and decreed that alcoholism should never be considered as a defense in cases of homosexual behavior. The whole matter of expert testimony in such cases, consisting merely in the adjudication or denial of inclination ("Hang"), was taken out of the hands of the medical experts and placed entirely in the hands of criminologists.

In the SS, not only homosexuals who committed offenses during alcoholic intoxication, but other incorrigible alcoholics as well, were condemned to death. Alcoholism and drug addiction were a considerable problem in the German Army. During the war, one thousand drug-addicted medical officers passed through the neuro-psychiatric services of Army hospitals.

Dr. Hochapfel was then asked whether psychopathic personalities were ever selected for jobs as "bullies" in concentration camps, such as the notorious "Beast of Belsen", and similar characters in lesser positions. Dr. Hochapfel gave the interesting answer that psychopathic personalities had been quite early found unsuitable for such positions by the Nazi party. On the contrary, specially reliable and stable people were selected for these positions, who were then brutalized by a special process of indoctrination. Their brutal performance pattern was then established and further fortified by practice. Dr. Hochapfel stated that only stable and stolid persons, real "boss" natures ("Richtige Bonzen"), performed well (according to Nazi standards, of course) in these positions; and that psychopathic personalities were not reliable enough for such jobs, especially in view of their natural rebellion against authority. He supposed that psychopaths occasionally got into such positions, but that most of them had soon to be disposed of again, which, of course, by SS standards, meant execution. Therefore, real psychopaths didn't last long in such positions, and the SS soon caught on to the selection of persons for such jobs on the basis of reliability and stolidity.

Of neurologic problems, the neuro-psychiatric complications of typhus, Russian headache fever, other meningo-encephalitides, and the Guillain-Barré syndrome, were among the biggest problems.

An interesting and quite general observation was that most psychogenic reactions at the front occurred during periods of relative quiet, and practically none during advances. Monotony was found to be the most disintegrating experience. Psychogenic reactions were also far more frequent in the Zone of the Interior than at the front. The fear of going to the front was more devastating than actually being at the front, and the fear aroused by enemy air attacks over German territory was greater than the fear aroused by combat activities at the front. Dr. Hochapfel concluded by saying that he had no comparative data concerning the civilian population, but thought that Dr. Kleist had interesting data concerning the reactions of the civilian population in Frankfurt.

4. Information obtained from Stabsarzt Dr. Eduard Beck, member of the Staff of the neuropsychiatric service of the Reservelazarett in Tutzing, Bavaria. Dr. Beck was very cooperative, and it is definitely due to his efforts that his chief, Dr. Hochapfel, was likewise drawn into an atmosphere of frank discussion without reservations. Dr. Beck is an astute observer and research man, who has not only contributed important work to the finer anatomy of the brain, but who also had become an accomplished psychotherapist during his many years of association with Dr. Oscar Vogt in Berlin.

In spite of Dr. Beck's qualifications, his utilization during

the war had not always been in neuropsychiatry, but because of his interests in the comparative anatomy of the brain he had first been placed in charge of a veterinary hospital for horses ("Pferdelazarett") from which assignment he was finally extricated through the efforts of Professor Bumke in Munich. At present he was found to be in charge of about 250 patients, most of whom were organic cases, mostly gunshot wounds and closed injuries of the head. There were very few neuroses at the Tutzing hospital, because most of them were transferred to Dr. Ziehen's military section at the Neuropsychiatric University clinic in Munich. The main treatment there consisted of electro-shock treatment and of treatment with strong galvanic currents, the latter being a modification of the old Kauffmann treatment. However, Dr. Beck saw a good deal of the general turnover of neuropsychiatric cases in other departments and army hospitals.

Dr. Beck stated that in general during this war there were "practically no tremblers: in this war the stomach was everything". Dr. Beck feels that there are two reasons responsible for this shift in symptomatology. One reason was the generally severe regimentation and handling of army personnel which especially discouraged any manifestations which looked or sounded like psychiatric ones. Hence, things were repressed to deeper psychosomatic levels. But Dr. Beck feels that this is not the entire explanation, and that another more simple explanation may actually be the more crucial one. Dr. Beck had been a regimental surgeon in the front lines in the last war and he had then made the experience that in the cold chill of the trenches under the simultaneous influence of normal tension incidental to artillery barrages a good many more people had briefer or longer episodes of trembling than later turned out to be actual neurotic tremblers. Dr. Beck feels that an occasional episode of trembling was quite a normal episode under the above conditions, and that it occurred in the bravest and strongest as well, and at times when they had no conscious subjective feeling of fear; but that neurotic personalities seized upon this quite general symptom as it provided them with a clue on the choice of symptoms for their neurotic illness. In other words, trembling was the normal key sensation and experience, which the neurotic personality seized and fixed as a nucleus for his symptoms expressing manifestation of disability. The same role which the occasional and transitory trembling had played in trench warfare, especially during winter, was played by gastric disturbances in the present war of movement. In a war of movement, due to the inevitable irregularity, shortcomings of preparation, lack of balance of hastily consumed cold meals, everyone - even the strongest and bravest - developed at many periods various degrees of gastric upset. These normal and widespread gastric disturbances, however, again gave the clue in the symptom-choice to the neurotics in this war, which was essentially a war of movement. (Dr. Beck's

explanation is indeed very illuminating and his observations in regard to episodes of non-meaningful trembling during trench warfare in normals are confirmed by two striking observations which Lord Moran contributed in his recent book entitled "The Anatomy of Courage". One of them is an observation on himself. On a chilly winter evening, during an artillery barrage, he found himself suddenly gripped by an uncontrollable shaking, which he at first attributed to the cold temperature. But, so he said, the tremor did not stop even after he put on his "British warms". It was not until his attention was distracted by taking care of the wounded coming in that the tremor ceased. Lord Moran stated that he had not been conscious of any particular feeling of fear at the time of his trembling attack. The other observation concerned a line officer with whom he had long been associated and who had never before or after shown any signs of undue fear or apprehension, or of neurosis. One day this man was standing on the top of a ladder looking out of the trenches through his field glasses. There was a high wind and an artillery barrage was in progress. Lord Moran suddenly noticed that the ladder next to which he stood began to shake rhythmically. When he looked up he saw that the tremor originated from his fellow officer who stood on top of the ladder, but who gave neither then nor at any other time any indication that he had been conscious of any fear at the time. I have had a very similar experience in the chill of the East Anglian winter myself.

Dr. Beck, who used to live off the post, had made some observations concerning the emotional effect of the aerial bombardment in the Munich area. The women particularly were in a continuous state of anxiety, and hysterical shrieking fits were not infrequent during raids. Another way in which war nerves manifested themselves in the civilian population was the way in which superstition, especially the belief in astrology, increased. In one month or another an astrologer predicted a heavy raid on Munich on "the 27th", and people ran away in droves and spent the night in the woods. People also looked for signs and portents in other ways. The Munich edition of the "Volkischer Beobachter" comes out at times with two or three little stars on the front page, the meaning of which is unknown and probably unimportant. People, however, began to assume that on the days when this newspaper came out with those little stars, the stars had been put there by the Nazi Party to tip its members off that a heavy attack was expected that night. This likewise led to mass exodus. It was generally believed that the Nazis got special messages from England. Dr. Beck feels that the bombing attacks decided the war. The nutritional situation was never bad.

5. Information obtained from Geheimrat Professor Dr. O. Bumke, Chief Consultant Psychiatrist and Neurologist to the Heeressanitätsstaffel München, with the rank of Oberstarzt (Colonel) in the German Army Medical Corps.

Professor Bumke had jurisdiction over 25 specialized military Neuropsychiatric hospitals (Lazarette) in 10 different locations, with a total bed capacity of 3000 beds. The largest single number of patients were those with gun shot wounds of the peripheral nerves.

This well known neuropsychiatrist and author of a well known text book which is in widespread use in many countries including the United States, was interviewed on 7 June 1945 and was asked a number of specific questions. My first question was: "Was the problem of neurosis well handled in the German Army?" Dr. Bumke answered "No". When asked to qualify this statement he said: "In one respect it was handled well in that it was prevented from playing a great practical numerical role. This was due to the policy of not evacuating neurotics from the front to the zone of the interior, but of keeping them at the front in whatever limited duty capacity was possible. But what I disapproved of was the Kauffmann-type of electric treatment with which people were freed from their symptoms and good symptomatic results were achieved without making good soldiers or more stable human beings out of them. Furthermore, I considered the whole way in which the treatment was given as non-medical and unsoldierly. I never could get myself to even look at it because I did not like the whole idea".

My next question was: "What were your experiences with psychosomatic illnesses?" Dr. Bumke replied: "Those we left completely to the internists. My decision in that respect was confirmed by the following experience: One day my internal medical colleagues took me to Bad Tölz" (which was the large Gastric Department of the Internal Medical Service) "and asked me to look over some of their functional stomach cases, and to give them opinions in regard to my findings, which they were then to compare with their organic findings. The only patient whom I thought I could identify as an essentially psychopathic deviant was one who had a massive positive Roentgen finding, and was a definite ulcer case. From then on I left them all to the internists. They have treated them and then discharged them into special stomach battalions."

6. Information obtained from Dr. Alfred Wiskott, Professor of Pediatrics, and at present also Dean of the University of Munich Medical School:

The main purpose of my visit to Professor Wiskott was to question him about the medical school curriculum in Germany during the war (which will be reported on in a separate report); but I also asked him whether he had observed any new diseases, especially of the nervous system, in children during the war, and what the incidence of encephalitis of various types was in children. Dr. Wiskott said that sporadic cases of Japanese type encephalitis had occurred in children during the war. The only new disease observed by him was a myocarditis in infants in the second half of the first year of life, which, however, was probably contracted in utero because of the intense scarring found at autopsy. It occurred with increased frequency in families and twins.

He observed 50 - 60 cases since the beginning of the war. He named the disease "myocarditis of sucklings" (Säuglingsmyocarditis). Also since the war, an increase in abscess forming pneumonias in children was observed.

7. Information obtained at the Psychiatric Clinic of the University of Heidelberg Medical School.

The director of this clinic, Professor Dr. Carl Schneider, who held SS rank, fled at the arrival of the American armies because of his participation in the executions of the insane (which are the subject of a forthcoming report). The present acting director, Stabsarzt Dr. Hans Joachim Rauch, Army Medical Corps, was interviewed. He stated that the military section of the clinic was mainly a diagnostic center, which admitted particularly patients with various psychoses, especially early diagnostically unclear cases that did not need closed ward facilities, post-traumatic states, convalescents from typhus with neuropsychiatric complications, and neurotics. There was also a small section with facilities for electro-suggestive treatment. Dr. Rauch, and especially his assistant Stabsarzt Dr. Friedrich Schmieder, German Army Medical Corps, who was likewise interviewed, were particularly interested in the neuropsychiatric sequelae of typhus. Dr. Schmieder has written an excellent and comprehensive monograph on the subject (Appendix 3, No.1). He found a great number of dystonic states similar to postencephalitic dystonia, as well as milder cases with predominantly vegetative symptoms which he called "vegetative dystonias". An interesting observation by Dr. Schmieder was the one concerning the prevalence of constitutional anomalies of the hypophysis (enlargements, underdevelopments and "bridge formations" in the X-ray pictures of the sella) among patients with neuropsychiatric sequelae following typhus as compared to unselected normal controls, which he interpreted as an expression of constitutional predisposition for the development of such sequelae. Dr. Rauch himself had been at the Russian front for half a year. He stated that he was lousy from the day he got there until the day he left. There was no effective remedy against infestation with lice, except an occasional steam delousing. In the first year of the Russian campaign practically everybody above the age of 50 years contracted typhus, as well as a good many others in the middle age groups, especially officers, flying personnel, doctors, and sanitary personnel. Later the incidence increased still further, even including the younger age groups. Typhus was one of the most significant problems of the German army in the East.

8. Information received at the Neurological Department of the Ludolf Krehl Clinic for Internal Diseases of the University of Heidelberg Medical School.

At my first interview with the second in command, Stabsarzt Dr. E. Bay, he stated that 40 beds in the department were reserved for civilians, and 50 beds reserved for military personnel, predominantly army men, of whom the majority were suffering from organic neurological disturbances. This was due to deliberate selection of patients because the department made a point of not admitting more than 5 psychogenic cases at a time, although it is obvious that they could have

admitted more had they desired. Their main material consisted of gunshot wounds of nerves and post-diphtheric palsies, and the psychogenic cases were likewise limited to cases with symptoms referred to the extremities, especially psychogenic palsies. Dr. Bay had a particular interest in patients with psychogenic fixation after recovery of an originally organic palsy, and he published a paper on the subject (Appendix 3, #4).

Dr. Bay stated that all functional cardiac and gastric cases in the Heidelberg military hospital system were treated by the internist Dr. Siebeck. Dr. Bay stated that in his opinion the organ-neuroses were by far the largest group of all psychogenic cases combined.

Other scientific interests of Dr. Bay were the etiology and therapy of multiple sclerosis (Appendix 3, #2), and problems of cerebral localization (Appendix 3,#3), especially tactile Agnosia (Appendix 3, #5).

Dr. Bay stated that in the civilian section of the department numerous psychogenic cases were treated. He stated that many psychogenic reactions to the bombing attacks occurred when they began and were relatively light, especially among women, and that the second peak of incidence of psychogenic cases occurred later when the attacks became really serious, especially in nearby Mannheim.

The former head of the department, Professor von Weizsäcker, left in 1941, when he was transferred to Breslau to become Förster's successor, and he took most of his physiological experimental equipment with him. Some of it has been stored in Zinsheim in order to be protected from air raids. Dr. von Weizsäcker's successor, Professor Paul Vogel, was mainly interested in clinical work and was doing no laboratory experiments, except some concerning optic disturbances in the brain-injured.

The head of the department, Obertabsarzt (Army Medical Corps) Professor Dr. Paul Vogel, was seen later. Professor Vogel stated that 40 out of the 50 military patients on his wards were usually organic cases, the other 10 were neurotics. The types of neuroses which he admitted and treated were usually some of the less spectacular hysteric shaking palsies and hysteric contractures. His main interest was in the hysteric overlays over organic palsies of arm or leg following gunshot wounds of the nerve. The treatment used in his department was a combination of psychotherapeutic discussions with massage and gymnastics. He did not use the Panse treatment because he had an aversion to that "massive and brutal method". However, Panse treatment was given in the Psychiatric clinic by a Dr. Wendt, and occasionally

Vogel transferred to it those of his patients in whom he could obtain no results with his own more subtle methods, or those who developed entirely without any original organic basis such as on the basis of a transitory organic nerve palsy.

Dr. Vogel then discussed the general problem of neurosis in this war as compared with the last war. He stated that in the last war most neuroses were "motor neuroses", but in this war they were "vegetative neuroses". These vegetative neuroses in this war were almost exclusively treated by internists. The means of treatment which the internists used were mainly atropine, hydrotherapy, and psychotherapy of a sort, which was sometimes given by a consulting neurologist with interest in psychotherapy, called into consultation by the internist. Dr. Vogel himself had one psychotherapist on his staff, namely Dr. Alexander Mitscherlich, who was a trained psychoanalyst, and a graduate of the "Berlin Institute for Psychotherapy and Depth-Psychology" headed by Professor M.H. Göring, Doctor Schulz-Henke, and Dr. J.H. Schultz. There the classical type of psychoanalytic training, including teaching analysis, was available.

As to neuroses among the civilian population, Dr. Vogel said that shaking neuroses after bombing attacks, were likewise less frequent than expected, and that as in the army, the predominant psychogenic syndromes were neurasthenic pictures with sleep disturbance, symptoms of vegetative lability, palpitation of the heart and gastric disturbances. He feels that the new shift in symptom choice existed not only in military personnel, but in the civilian population as well, i.e. a shift of the hysteric symptomatology from the tremors and paralyses of the extremities to the vegetative system. Pure classical anxiety neuroses, however, were not very frequent, and were less common in the military than in the civilian population.

All functional illnesses in the army showed a steep increase in the second half of 1944; they increased rapidly by 100% over what they had been up to that time. Dr. Vogel thinks that the cause of this 100% increase was the fact that the younger age groups, especially 17 - 19 years, were suddenly drawn into strenuous military service and that these age groups were more susceptible to the development of neurotic reactions.

Dr. Vogel served in Berlin as neurologic and psychotherapeutic consultant to Dr. Tönnis's neurosurgical center from 1939 - 1940. Dr. Vogel's main job was to treat by means of psychotherapy patients admitted to Dr. Tönnis's clinic as brain tumor or brain injury suspects and who turned out to be cases of neurosis. He used a modified analytic method for his psychotherapy. Dr. Vogel states that of Dr. Tönnis's 60 beds at that time, four of five were usually occupied by neurotics. I then asked Dr. Vogel about his ideas concerning "Hirnleistungsschwäche" (brain performance weakness). He stated that the concept had essentially been evolved by Dr. Reichardt and he described it as basically similar to our concept of post-traumatic syndrome. Dr. Vogel stated that practically no such cases were seen after concussion and he considered the post-concussional syndrome when it lasted any

length of time as essentially due to neurotic fixation; but that the syndromes occurring after contusions can be due to organic post-traumatic cerebral damage.

The greatest single neurological problem was the many polyneuritides, most of which were post-infectious namely due to panaritium, abscesses etc. These patients had sensory changes, ataxia, flaccid weakness, but no pain. The number of these polyneuritides increased progressively throughout the duration of the war. Such cases originally came from the Africa Corps and later in increasing numbers from Russia. They were clinically like postdiphtheric palsies, and the purulent lesions which festered for a long time were probably wound diphtherias. In some cases the lesions actually yielded diphtheria bacilli. The increase of wound diphtheria could be ascribed to an increasing deterioration of hygiene as the hardships of front life increased during the progress of war. Dr. Vogel states that these polyneuritides following festering wounds had been known for a long time, but that they had not been identified as postdiphtheric palsies until this war. Bannwarth, who had originally described these palsies as "polyneuritis after ulcus cruris" regarded them as an allergic reaction to the purulent infection, but they are now properly identified as post-diphtheric. Diphtheria on the whole was very frequent in Germany. The diphtheric wounds usually fester for about nine weeks; the post-diphtheric polyneuritides get well about three to four months afterwards. Dr. Vogel has seen no cases of respiratory paralysis in post-diphtheric polyneuritis. His treatment was bedrest, strychnia, administration of high doses of vitamins, massage, and exercise.

His publications during the war deal with general reviews (Appendix 3, #6), especially on lesions of the peripheral nerves (Appendix 3, #7, 8 & 9) and on the vegetative system in brain stem lesions (Appendix 3, #10).

9. Information obtained from Oberstabsarzt Dr. Alfred Schwenninger, German Army Medical Corps.

Dr. Schwenninger (MD, Munich 1912), is a trained neurologist and psychiatrist, who has been in the army since 1939. Throughout that time he has been in charge of the military section of the State Hospital for the insane in Wiesloch (Badische Heil-und Pflegeanstalt Wiesloch, near Heidelberg). His hospital section at present numbers 1290 beds. Originally 500 of those were neuropsychiatric beds. Of these usually 200-400 were occupied by cases of brain injuries, 180 by patients with injuries of the peripheral nerves, 30 by patients suffering from other cerebro-spinal organic diseases, and the rest by psychoneurotics and psychopaths. At present 1193 patients are in his hospital section, of whom only 69 are neuropsychiatric patients. Thirty are patients with gunshot wounds of the head, 15 are psychotics and the remainder neurotics and psychopaths. He did not use the electro-suggestive treatment: "I do not think much of the Ponse treatment; that was nothin but brutality, one cannot really dignify it by the word 'suggestion'."

Dr. Schwenninger himself feels that the really effective treatment of the neurotics, whatever fancy method was used, was actually accomplished by the simple fact that they were put on limited service. He himself preferred a modification of Binswanger's therapy, which was nothing but simple suggestion by "talking it over". He feels that the results by this treatment were as good or even better than any obtained by the more popular brutal methods. Binswanger's system consisted first in a period of complete rest, then gradual activation and talking it over. The whole course of treatment lasted usually 4 - 5 weeks. All hysteric symptoms such as stuttering, aphonias, gait disorders such as astasia-abasia, as well as postural abnormalities, responded very well, but the real therapeutic point was that the patients got to know by grapevine that after they got well they would not be sent back to the front, especially not to Russia. All limited service men were sent to France: "that is probably why those armies folded up so easily".

The Germans' claim that "there were no war neurotics in this war", which they made in the early phases, was nothing but a claim. Carl Schneider used to say "in this war there are no more neurotics. That has been taken care of by the political education of the people." There were really no neurotics to speak of in 1939 - 1940, but that was due to the rapid and successful events of that war period; but in the last few years the neuroses increased enormously "in doubtful personalities". To be sure, there were no discharges from the German army for either neurosis or psychopathy; the psychopaths were all put into prisons or into punishment battalions and the neurotics were sent to limited service or hospitalized in state hospitals for the insane, but they too remained in the army.

The administration of justice in this war was much more severe than in the last war. Dr. Schwenninger himself had a very extensive military medico-legal practice; he had to deliver one expert opinion per day. The usual crimes were desertion, unauthorized wearing of decorations, impersonating an officer and so forth. Most of these cases came from the big army prison in Germersheim, which had a capacity usually fully utilized for 1200 military prisoners. Some of the prisoners were also sent to the psychiatric clinic in Heidelberg for expert appraisal.

As to the psychoses in army personnel, they are in no way different from psychoses in civilian life.

Every punishment company consisted of 150-200 men. Some of these companies were used in rear areas, for farm work and construction work in Russia. Others were used as "redemption battalions", doing dangerous chores in particularly exposed areas in battle. If they survived and performed well for a certain time under such combat conditions, they were sometimes pardoned and returned to the regular combat roops. The officers of these special punishment and redemption battalions and companies, as well as the non-commissioned officers were especially trained for these assignments.

In view of the draconic punishments for certain crimes, particularly homosexuality, it became the accepted practice among experts to go all out in finding the accused criminally not responsible. "We always excused them (the homosexuals) and sent them right back to the troops". The causes for abolition of criminal responsibility sometimes required some heavy thinking. Dr. Schwenninger recalls that in one case of homosexuality he explained it as having been due to an old fracture of the skull in the region of the hypophysis (since the law concerning homosexuality excused people with endocrine abnormalities). When nothing else could be found one declared them to be due to pathological or severe intoxication.

Of neurological cases, cases of wound diphtheria with polyneuritis, were particularly numerous. "There were a lot of festering wounds and most of them were due to wound diphtheria". 50% of gunshot wounds of peripheral nerves recovered spontaneously.

Dr. Schwenninger treated six cases of polyneuritis due to tetraethyl-lead intoxication, two of whom had delirious mental disturbance. The intoxication was sustained while washing cars with aviation gasoline; all were Air Force ground crew men. One of his assistants, Oberarzt Dr. Martin Kütemeyer, prepared a special report on these cases which was sent to Berlin, together with the case histories. There was some disagreement about the diagnosis in these cases as Dr. Vogel in Heidelberg, the consulting neurologist, had diagnozed some of them as multiple sclerosis, but Dr. Schwenninger recalls that they did have blood changes characteristic of lead poisoning.

10. Information obtained from Oberstarzt (Colonel) Professor Dr. Karl Kleist, chief consulting psychiatrist to the 9th (Kassel) Corps Area.

Dr. Kleist was visited at the university clinic for nervous and mental diseases in Frankfurt on Main of which he had remained the director throughout the war. However, during the war, in addition to teaching, he had spent most of his time with his military duties leaving the major part of his civilian work to his second in command, namely Dr. Karl Leonhard, associate professor in neuropsychiatry at the University of Frankfurt on Main. Dr. Kleist was very cooperative and expressed a great deal of pleasure at my visit; I had studied under him before the war. Dr. Kleist had just been reinstated in his former position after a brief period of suspension from his post because of the fact that he joined the Nazi party in 1940. He gave up his original attitude of passive objection to the Nazi government at that time because he thought that the war was practically won and that he had to come to terms with them in order to be able to continue his research. However, he stated that he had used his position in many ways to attempt the exertion of a moderating influence upon them, especially in regard to their illconceived policy of exterminating the insane by neglect, which he has criticized as far as he considered feasible "without committing suicide myself". This had related policies

concerning the mentally ill will be dealt with in a separate report.

Dr. Kleist gave me access to reprints of his published papers as well as to a complete set of his unpublished quarterly reports to higher army authorities. These quarterly reports are very instructive because they are detailed and include a good many individual case reports, including reports of medical legal cases which allow a very concrete realization of the problems confronting the German Corps Area consultant in psychiatry. In 1944 Dr. Kleist published a summary of his reports of 1943 (Appendix 4, # 1), in which he stated that in terms of total numbers of cases under his care, peripheral nerve lesions were the most numerous, followed in the order of numbers of cases by the psychopaths and the psychogenic reactions, then in the third place by the injuries of the brain including contusions and concussions. Then, after a considerable interval came the following: organic diseases of the peripheral nerves, organic diseases of the brain and spinal cord, mental deficiency, and the convulsive disorders. Injuries of the spinal cord and the psychoses are the smallest groups.

Of the polyneuritides, those due to wound diphtheria were the most frequent, followed by the toxic polyneuritides which were particularly frequent in Russian prisoners-of-war who mistook industrial alcohol for potable beverages. Then came polyneuritides of the Landry type, some of them associated with metabolic disorders, especially haematoporphyrinuria. Of the mononeurititides, sciatic neuritis was the most frequent; but Dr. Kleist emphasized that this type of neuritis is very often aggravated by functional mechanisms and frequently represented an entirely functional syndrome. Dr. Kleist felt that the functional variant of sciatic neuritis was highly "infectious", especially if too many sciatic patients were concentrated in one hospital. He felt that single cases distributed over hospital wards filled with patients of other types did better. Dr. Kleist emphasized that lumber punctures should be performed in all such cases, since the organic variant frequently showed increased protein in the spinal fluid and a lesser increase in cells. He stated that encephalomyelitides, especially optic neuro-myelitis, had increased, and that similar syndromes have occurred as complications of typhus. Post-encephalitic Parkinsonian states with predominant personality disorders had been discovered in patients who were originally considered disciplinary problems. There were a number of symptomatic psychoses in febrile illnesses. Dr. Kleist emphasized that multiple sclerosis should be considered as a condition incurred or aggravated in line of duty, because physical hardships may have definite aggravating effect upon it. Dr. Kleist made the interesting statement that he has come to consider Adie's syndrome as due to an avitaminosis. It responded to high doses of vitamin B and C. Dr. Kleist mentioned that hyperthyroidism had greatly increased,

but he stressed that even marked increase of the basal metabolic rate was not necessarily a proof of its organic causation, although it was too often considered as such. He stated that hyperpnea in anxiety states or even volitional hyperpnea may frequently be a source of technical error. Dr. Kleist mentioned the occurrence of vascular accidents in young people under the combined influence of excessive smoking, excessive intake of coffee, emotional excitement, excessive physical strain and hot weather. As to the psychoses, Dr. Kleist stated that far more psychotic disturbances were being mis-diagnosed as schizophrenias than vice versa. In particular, psychogenic and anxiety depressions as well as symptomatic psychoses caused by physical illness were too often mistaken for schizophrenia. On the other hand, Dr. Kleist stated that too many psychoses were not recognized at all, especially melancholias and anxiety depressions. Sometimes these patients commit suicide before their mental state is appreciated in the proper light. Dr. Kleist stated that in such cases the question as to whether the condition was incurred in line of duty should be answered in the affirmative because of the existence of "special conditions of military service, in that symptoms of illness were insufficiently appreciated thus constituting a lack of medical and specialized attention". Dr. Kleist mentioned another case of catatonic schizophrenia who was mistaken for a malingerer and assigned to a special punishment battalion where the true nature of his condition was finally discovered. Of the 100 suicides that were referred to Dr. Kleist for appraisal during the year 1943, diagnostic categories grouped themselves as follows :

Melancholia	10
Anxiety depressions	6
Hypochondriac depressions	11
Reactive depressions (in the presence of depressive, cyclothymic, emotionally labile or sensitive personality)	28
Affective reactions in characteropaths	25
Symptomatic psychoses of depressive coloring	7
Schizophrenia	2
Depressive states incidental to other diseases: (epilepsy: 1 mental deficiency: 1, traumatic brain weakness: 2 alcoholism: 3).	7
Unclear cases	4

Dr. Kleist stated, in discussing these cases, that depressive remarks and inhibitions in soldiers are too frequently mistaken as expressions of laziness or recalcitrance and unwillingness for duty, and that when depressives seek solitude they are frequently reproached with lack of comradeliness. Among the hypochondriac

depressions, the predominant fear was that of having contracted venereal disease, with the attendant worries and self-reproaches because of extramarital sex relationships. This was particularly so in married soldiers. Dr. Kleist also mentioned that on the internal medical services many patients were being studied and observed for vague and hypothetical physical abnormalities, such as high blood pressure, heart muscle damage or thyrotoxicosis, and that the true nature of their condition was not being discovered until after they committed suicide or attempted to do so. In the group of reactive depressions among sensitive personalities, the predominant motive was hurt pride especially as a consequence of reprimands, but conditions incidental to military service were only responsible for half of these cases, while in others suicide was caused by marital discord, love affairs or financial worries.

In the chapter on hysteric reactions Dr. Kleist emphasized that proper and thorough examinations were the only method to avoid pampering hysterics on the one hand, or subjecting people suffering from organic nervous illnesses to strenuous and for them injurious methods of treatment on the other. This applies especially to cases with tremor and other hyperkineses, organic variants of which were too often mistaken for hysteria and subjected to Panse's strong electric currents. On the other hand, hysteric states, especially sciatic neuritis, were frequently mistaken for organic ones. Dr. Kleist emphasized that organic and hysteric disturbances may be coexistent, and that a careful history was always necessary to unravel complicated cases. Bizarre multiplicity of symptoms was usually suggestive of hysteria, such as in the case of a soldier who was injured by shell fragments on the left side of the neck and the left upper arm and who developed a bizarre picture of disability consisting in the fact that whenever he, or somebody else passively, elevated his left upper arm his voice became reduced to a whisper. Another patient developed fits with palpitation, vomiting and crying, after he had been injured by a shell splinter in the gluteal region. Dr. Kleist stressed that psychological understanding was necessary in those cases because most of these patients due to heightened autosuggestion had an honest conviction of being disabled. Even severe psychotic hysteric disturbances with incoherence, stupor and pseudodementia may occur in the wake of debilitating diseases such as dysentery, if associated with loss of weight and strength as occurred in a case of a soldier whose mother too had a severe post-traumatic neurosis. Another soldier born in Poland who was somewhat primitive and unintelligent and had already had one hysteric reaction while he was still fighting with the Polish Army against the Germans, developed a severe fugue state with pseudodementia, incoherence, trembling and weakness when he was taken over into the German army. This man recovered after treatment on the closed ward for excited patients, on a regime of prolonged baths and rest in a darkened room. Dr. Kleist warned against letting any such psychotherapeutic measures appear as punishment because the hysteric as such was no malingerer, although there were some people who were both. Thus psychotherapeutic results achieved must always be supported and reaffirmed by occupational therapy.

Of the characteropaths, most of them were seen because of offences that they had committed or because of attempts to escape punishment by suicide. Among the offences, the most numerous were AWOL and desertion. Furthermore, there were thefts, "corrosion of the armed forces", self-mutilations, unauthorized wearing of ranks, badges and decorations.

A quarterly report by Dr. Kleist at a later period of the war deals with the period up to December 31, 1944. (Appendix 4, # 2). Of 1980 patients, 1108 had lesions of the peripheral nerves, 1013 of them injuries by missiles, 95 neuritides and polyneuritides. There were 99 spinal cord cases, 82 of them injuries, 17 diseases. There were 591 organic brain lesions, 527 of them injuries. There was a total of 182 psychogenic cases. Dr. Kleist stated that the most striking change was the great increase of the neuritides and polyneuritides which had jumped to 95, from 22 during the preceding period. The report contained reviews of interesting medico-legal cases, such as one involving murder followed by suicide, in the case of an officer who killed a fellow officer and himself in the course of an evening in which they wined and dined with two ladies, presumably in a fit of jealousy. Other medico-legal problems included AWOL, desertion, assault, disobedience, resisting arrest, attempted rape, subversion of the armed forces, hostile utterances against the state, unauthorized wearing of decorations, perjuries, fraud and unauthorized medical practice. Of 30 cases, 12 were found not responsible for pyschiatric reasons, in four diminished responsibility was found. Among these excused were two mental defectives who ran away in hapless panic on the day following their induction into the military service. One of them, when brought back and hospitalized, was in a state of acute disturbance. He thought one patient looked like a snake, another soldier was the Black Satan himself, and others were Bolshevik agents, or disguised spies. Voices whispered to him at night that his hour had come, black shadows moved about him and looked like dead people; sometimes he felt a cold hand grabbing him by the neck. This picture was interpreted as a reactive anxiety state in a mentally defective individual.

Another borderline mental defective ran away during an air raid into a forest where he hid himself and walked about without direction for several days and nights, until some farmers picked him up. He had a previous similar episode during an air raid whilst serving on the Italian front. Even during observation in hospital he showed marked anxiety during air raids. A patient with hydrocephalus had committed an assault against a sergeant for which he had complete amnesia. He was likewise declared irresponsible.

Dr. Kleist mentioned that some patients with residual symptoms following typhus or diphtheria had been unjustly suspected of malingering. On the other hand, cases referred as organic at first were, upon thorough diagnostic study, revealed as functional and successfully treated at the electro-suggestive treatment center of Stabsarzt Professor Dr. Gerum at the Reichsschulungsburg Oberursel.

The publications by Dr. Kleist and his co-workers concerned the following subjects: Anxiety Psychoses (Appendix 4, #3); episodic bouts of sleeping in endrocrine, especially hypophysial disturbances (Appendix 4,#4); the epileptoid psychopathies (Appendix 4, #5); liver function in thymergasic psychoses (Appendix 4, #6); paranoid schizophrenia (Appendi 4, #7,8 & 9); catatonia (Appendix 4,#10); spinal fluid studies in endogenous psychoses (Appendix 4,#11); an interesting study of facial expression with particular attention to those parts of the face which do not primarily participate in expressive mimic activity (Appendix 4, #12); on optic spacial ideas involved in calculation (Appendix 4,#13); on dyspraxia and dysphonia (Appendix 4, #14); Alzheimer's disease (Appendix 4,#15); cerebral manifestations in Buerger's disease (Appendix 4,#16); frontal lobe tumors (Appendix 4, #17); central pain and hyperpathy in lesions of the cerebral cortex (Appendix 4,#18); on symptomatic psychosis in pituitary dwarfism (Appendix 4,#19); and on thinking disorders in post-traumatic states (Appendix 4,#20).

In a personal conversation, Dr. Kleist stated that gross hysteric disorders, such as hysterical shaking palsies, increased during the latter part of this war, but the greatest number of neuroses still remained the "masked neuroses", by which he meant psychosomatic illnesses. One of the greatest problems in terms of numbers of patients were the post-diphtheric polyneuritides. Even apart from these,"polyneuritides played an entirely colossal role in this war". Some cases occurred in scarlet fever; "and on the whole it can be said that there was not an infectious disease in the German army that did not cause many polyneuritides". Furthermore, "there has not been a war before in which so many wound diphtherias occurred." Dr. Kleist treated the post-diphtheric polyneuritides with diphtheria serum and vitamins.

The von Economo type of encephalitis was very rare, but did occur. Post-infectious encephalomyelitides were quite frequent. Post-encephalitic personality changes were pretty important as a medico-legal problem because it made the soldiers so afflicted "sleepy and sassy". The fact that so many of these cases turned up in the army was due to the fact that there was no specialized neuropsychiatric examination of inductees. Only after the soldier had aroused attention was he sent to a psychiatrist. Dr. Kleist had a special neuropsychiatric out-patient department for soldiers in his clinic. He feels that a considerable number of neuropsychiatric abnormalities were entirely overlooked, because a good many were handled as purely disciplinary problems. Dr. Kleist himself had nothing to do with the special formations and battalions because they were, on the whole, organized and administered without participation of medical or psychiatric echelons. There were many psychopaths in these formations. Dr. Kleist said that he himself never visited any such formations and he does not really know whether the whole system of these formations was useful from the point of view of the war effort or not. The special field formations probably were. The main point in those formations was a very severe discipline and the maintenance of a high pace of continued strenuous activity. Every German army, particularly in Russia, had such formations. Dr. Kleist said that he learned most

about those formations through Professor von Stockert, who was consulting psychiatrist with an army at the Russian front, where he was later captured by the Russians. Another of Dr. Kleist's pupils, Dr. Kolle, was likewise captured by the Russians.

Dr. Kleist's second in command, associate Professor Karl Leonhard, handled most of the civilian work at the clinic during the war. About civilian casualties, he added to the information received from other sources and reported above, one more of the psychologic effects of the heavy air bombardment upon the mentality of the civilian population. He stated that one of the most striking and appalling mental changes of the population as a whole was a quite generalized "egotistic regression" ("egoistisch zurückgeschraubtsein"). This symptom manifested itself in a completely egocentric focussing upon the individual's personal problems alone. If a man's house had not been hit but the rest of Frankfurt was wiped out, he was happy. If his own possessions had been destroyed but the rest of the town got off lightly, he was convinced it was the worst raid! This was particularly appalling to Professor Leonhard after the big raid of 22 March 1944, when people whose houses had been spared were openly rejoicing.

11. Information received from Oberstabsarzt Dr. Herbert Kaltenbach, formerly Consulting Neuropsychiatrist with Rommel's Afrika Corps (April 1941 - April 1942), now chief physician of a hospital for chronic neuropsychiatric casualties in Königstein im Taunus, near Frankfurt on Main.

Dr. Kaltenbach is at present in charge of a 112-bed military hospital, which used to be his own private sanitorium before the war, but was requisitioned by the army at the beginning of the war. Dr. Kaltenbach himself enlisted in 1940 to serve as neuropsychiatric consultant with various armies, at first during the campaign in France, later with Fieldmarshall Rommel in Africa. Dr. Kaltenbach stated that although the average age limit for officers in the Afrika Corps was 45, he received a special waiver for his age of 52 because he knew the climate and conditions from various zoological expeditions in which he took part as an amateur zoologist. In April 1942, however, the rule regarding the age limit was tightened up and he had to return to medical army service in the zone of the interior. Later, he happened to be stationed at his own former private hospital. His patients consisted for the most part of organic traumatic spinal paralyses, a few cases of multiple sclerosis, in addition to a number of patients with functional disorders.

Dr. Kaltenbach stated that since the end of 1943, there had been a general increase in the incidence of functional nervous disorders, but he felt that even with this increase there were

significantly fewer than in the last war. In this war there had been a particularly large number of disturbances expressing themselves in fits, especially of the vasomotor type. The latter were treated by a regime consisting of rest, luminal and glucose, but most of them were discharged from the army under one organic diagnosis or another.

Dr. Kaltenbach said that the Afrika Corps was the only German army corps in which the principle of selection was extensively applied. It also was the only army corps which did not contain any special or punishment battalions. General Rommel did not think much of them and he did not want to have any.

The main stress in North Africa was the intense heat, which caused the development of nervousness and headache, particularly in leptosomic individuals. Pyknics did much better. All individuals who developed neurasthenic complaints were immediately shipped back to Germany, where most of them quickly recovered. This active weeding-out policy was decided on by General Rommel because he felt that soldiers who could not stand the climate were only a burden to his troops and a great deal of effort was concentrated on keeping the entire body of troops as healthy as possible. He feels that in other outfits in other locations, many of the soldiers removed from the Afrika Corps would have been handled by disciplinary means, punishment companies etc, not necessarily deliberately but because their true conditions would not have been recognized. In North Africa they were simply weeded out and shipped back.

Dr. Kaltenbach was then asked whether he thought that the punishment formations had proved their practical usefulness elsewhere, or whether Rommel's view in finding them altogether undesirable would have been the right one to take, not only in North Africa, but in other theaters of war as well. Dr. Kaltenbach replied that he does not think that these punishment formations were worth while from a military point of view, because the types of psychopaths who were put into them were completely inaccessible to discipline. He considers the possibility that some of them may have stood the test of sharp combat actions, but he does not know the general overall picture. Dr. Kaltenbach then stated that while Rommel had no special or punishment battalions, he did have two regiments of the former French and Spanish Foreign Legions.

These two regiments proved remarkably good. Dr. Kaltenbach remembers no single instance of neurosis among these troops. This at first surprised him because the Foreign Legion had been composed exclusively of people who were black sheep at home, got into difficulties and then joined the Foreign Legion. These regiments consisted of 4,000 men. Those who survived combat were awarded German citizenship. They were supposed to have been born Germans. They were all people of remarkable resourcefulness, "if you put one of them naked into the middle of the desert, after an hour he would come back to you with full kit". They were at perfect ease in practically any situation, no matter how tough, and were no doubt the best single body of troops in the Afrika Corps. There was no such thing as a neuropsychiatric casualty among them.

As to treatment, Dr. Kaltenbach stated that he never used Panse's method, neither here nor in Africa. Dr. Kaltenbach added that Panse's method was not really used much until 1943. It was only since then that it was used to any significant extent. There was an electro-suggestive treatment center near here in Oberursel at the Reichsschulungburg, headed by Dr. Gerum, who is now supposed to be in American captivity. His treatment center had 120 beds, and was one of two in the 9th Corps Area (Wehrkreis). He received all his cases by referral from other military hospitals. Most of the patients sent there were patients with gross hysterical paralysis, not anxiety states. Dr. Kaltenbach knows about 5 or 10 patients who were treated there. In general, Dr. Kaltenbach found that among the patients suffering from psychogenic nervous disturbances, those who had symptoms of excitation reacted better than those with symptoms of inhibition. His own preferred treatment in early cases was by baths, various medicines, and a measure of psychotherapy. Only if such treatment was unsuccessful and if the patient did not react to any treatment for half to three quarters of a year in a military hospital, was the chief consultant in psychiatry called in to decide whether he should be transferred to a special center for electric treatment. This decision was usually made by Dr. Kleist for this corps area. At the treatment center galvanic currents of 100 milliamperes which were exceedingly painful were used. One treatment was usually enough to produce results. In rare cases two were required. Every corps area had one or two treatment centers and the men in charge of them were specially trained by Dr. Panse. Dr. Gerum too was a graduate of Dr. Panse's course. There were no follow-up studies as far as Dr. Kaltenbach knows, but every patient was told on discharge that if he suffered a relapse he would be returned to a similar type of hospital.

12. Information received from Oberstabsarzt Dr. Walter Kilb, who served as regimental surgeon in France from 10 May to 1 December 1940 and on the Russian front from 24 June 1941 until April 1942, and later served in Germany in Neuropsychriatric Army Hospitals until November 1944, later with army units in Limburg a.d. Lahn.

During and following the French campaign in 1940, hardly any neurotics or psychopaths were seen by Dr. Kilb among troops under

his jurisdiction. There were several cases of alcoholism, pathological intoxication etc. which were handled by legal procedure. One man who assumed a threatening attitude to a non-commissioned officer was sentenced to 4½ years in prison, although the non-commissioned officer was a friend of his. These punishments were definitely deterrent. There were several cases of desertion. Toward the end of 1939, several desertions with flight into Switzerland occurred. Those who were caught, including the son of a rather prominent man, were given life imprisonment.

During the Russian campaign Dr. Kilb saw some more psychopathic behavior, including theft of cigarettes and Christmas parcels from comrades. In the zone of the interior, where he returned in May 1942, he was in charge of a hospital section for gunshot wounds of the nerves; among the 180 patients on that section usually 5 - 6 were psychogenic, most of these showing pseudoradial or pseudoperoneal palsies.

Early in 1943 Dr. Kilb was sent to attend a special 10 day course in Heidelberg where he was to be trained in Panse's electrosuggestive therapy. He considered this method of treatment "pure and unadulterated sadism". It impressed him that the personnel was poorly trained and inexperienced. On discharge the patients were given a yellow slip which was attached to their service record and got them back to Heidelberg in case they had a relapse. Dr. Kilb feels that the Panse treatment was handled worse in Heidelberg than in other places. "They used to put some of them through the wringer for an hour, and then not get any results". The treatment was carried out much better at the treatment center in Cologne, where they first gave psychotherapy for half an hour, and then electric current for only 2 - 3 minutes. Dr. Kilb's experience on assignment to troop units, convinced him that all these patients ultimately relapsed "except when they got anywhere near Heidelberg, when they quickly recovered".

Since 1943 there was a great increase in the number of hysteric palsies, most of them pseudoradial and pseudoperoneal palsies. At the same time there was an increase in court martials for desertion. From May to November 1944, when Dr. Kilb served at the Hospital for the brain injured in Bad Homburg, he saw a good many patients with hysteric overlays in terms of headache and dizziness. In his opinion 20% of the so-called brain injured were actually psychogenic cases. They were all discharged as unfit for further military service under an organic diagnosis but many of them were put into the Volkssturm at the end of the war.

As soon as the Americans crossed the Rhine, desertions went way up. Dr. Kilb observed this while he was assigned to troops in Limburg from January to May 1945. He was in charge of an army aid station. Apart from the open desertions, there were lots of people who came back from the front with big bandages over tiny little scratches. They were likewise classed as deserters. The vast

majority of them were sentenced to death and a number of them actually executed. Dr. Kilb knows about that because his duties as a physician included the painting of the heart over the chest of the soldiers condemned to die. On 20 March 1945, i.e. 7 days before the Americans came into Limburg, six cases were tried. One was declared irresponsible because of feeble-mindedness and turned over to the civilian authorities. Five were shot. During the period from 6 - 27 March 1945, 6 - 8 deserters were shot daily by the troop unit to which Dr. Kilb was assigned.

Dr. Kilb then discussed the special formations. In his opinion they were essentially made up of psychopaths. People who were stubborn or thought that the non-commissioned officers were picking on them were put into those formations. There they were given rugged drill and lessons in blind obedience, which included the climbing of stairs interrupted by laying down and getting up every other step. In the field they were used mostly to remove mines. The vast majority of the soldiers in those special formations have proven useful. They were distinguished from other soldiers by the fact that they were not allowed to wear any badges. Those who did well were transferred back to the regular combat troops, where they could wear insignia of rank and badges again. The army was constantly looking for energetic non-commissioned officers and officers to staff those special formations. Dr. Kilb feels that the system was good and that it proved its worth, although he feels that "one might have afforded to treat the men a little better, still strict and severe, but a little more decently".

13. Information received from Dr. Anton Edler von Braunmühl, at present in charge of the Heil- und Pflegeanstalt Eglfing-Haar, near Munich.

Dr. Von Braunmühl contributed information on the treatment of psychotics, especially schizophrenias and other endogenous psychoses. During the past 8 years, he treated 1700 cases with a combination of electro-shock and insulin shock treatment. Dr. von Braunmühl kept very extensive records which are particularly interesting in that they also include comparative weight curves. Dr. von Braunmühl made some observations on sensitization to insulin which occurs when the regular dose is lowered once. He has written a book on his methods, which are quite ingenious modifications of the standard ones. This book is being held as a manuscript by the Julius Springer publishing company.

Dr. von Braunmühl , on 3 June 1945, also gave me valuable information on execution of the insane in the Munich area and turned over documents, which, on the following day, were shown by me to a CIC Investigator and turned over to the 7th Army Document Center. The information given by Dr. von Braunmühl in regard to these matters will be dealt with in a separate report.

14. Diagnosis, treatment and disposition of soldiers with psychosomatic disorders in the German army, based on information given by Dr. Richard E. Siebeck, Professor of internal medicine at the University of Heidelberg, and consulting internist to the 3rd and 12th German Army Corps.

Dr. Siebeck, who succeeded Dr. Krehl in 1931, but left Heidelberg for Berlin whence he returned to Heidelberg in 1941 to resume his previous position as Krehl's successor, was interviewed at his hospital in Heidelberg. He was very cooperative and appeared to have a very thorough understanding of the problem of psychosomatic diseases. His medical department of the University hospital had 150 beds reserved for members of the armed forces, but he usually had only 120 military patients at one time in that hospital. An additional 150 beds were in a special military hospital, likewise under his direction. He confirmed what had been told to us from other sources, namely that the psychosomatic illnesses and the organ-neuroses, especially cardiac and gastric neuroses, were exclusively handled by internal medical men in the German army. These cases were very frequent. The most numerous were the gastric cases. They were far more numerous than the cardiac cases. A good many of these gastric neuroses gradually developed actual ulcers. Particularly predisposed were soldiers who had been severely exhausted; but a good many among them were individuals who should never have been inducted into the military service or at least should not have been sent to combat. They are predominant among those whose system failed in this manner.

Dr. Siebeck added modestly: "I really cannot call myself a psychiatrist or psychotherapist; I have merely read a good deal about that and have been much interested".

In addition to his 120 patients in the university hospital, he had a special military section (Lazarett) for stomach cases only. The 150 beds there were always in demand. The groups of patients in the 120 beds in the main University hospital distributed themselves as follows: usually 20 gastric neuroses, 20 heart neuroses, the rest infectious diseases, articular rheumatism and polyarthritides. To his surprise, he never had any functional arthralgias.

The gastric and cardiac neuroses were listed statistically under the diagnostic categories of stomach and heart respectively, and were not included in the statistics of neuroses or illnesses of the nervous system. Apart from the figures given above, concerning relative representation among the patients on his service, Dr. Siebeck did not know any overall figures. De. Siebeck said the only figures which had significance were available at the Militärärztliche Akademie in Berlin, Scharnhorststrasse; "we did not know any overall figures". Professor Wuth and the other consultants in Berlin did collect statistics. But Dr. Siebeck is certain that the organ-neuroses were far more frequent than other types of neuroses. Dr. Siebeck feels that the fact that trembling was no longer recognized as a disabling condition may be the main cause accounting for the shift in symptomatology to the inner organs. " Trembling became morally

disreputable". "I always used to say 'to-day the stomach does the trembling'."

Apart from the stomach cases which were numerically the most important, there were numerous functional circulatory disturbances, particularly in young people who on admission showed slight elevations of blood pressure and circulatory lability. This occurred especially in people of the type that "fold up easily". Also some of the stomach cases had additional complaints suggesting associated circulatory disorders such as dizziness. In many of them there was marked loss of weight.

The treatment was usually initiated by taking an analytically oriented history which in itself had an indirect therapeutic effect. Special care was taken to find out "where the shoe was pressing the patient". Dr. Siebeck stated that he had a very able assistant, a female lay psychotherapist, who had been trained in Berlin at Professor Göring's institute, by a man who was a Jung student. "But the psychotherapeutic treatment must flow into the medical treatment in these patients." The main thing is to activate them. In the heart cases exercise, in the stomach cases diet, but above all keep them occupied and active. In the heart cases Dr. Siebeck found a system of graduated exercises with gymnastics and medicine ball to have excellent therapeutic effect, but the main thing was to see to it that after they got well they were assigned to limited duty, preferably garrison duty. That applied equally to the heart cases and the stomach cases, which were never sent back to combat duty. At one time some were sent back to combat duty, because of independent action on the part of administrative echelons, but they immediately folded up again and had to be returned to the hospital. Dr. Siebeck had seen cases who were returned to him three or four times.

In the more severe cases with gastric symptoms, dizziness and marked loss of weight, an initial period of bed-rest with a special diet was considered necessary. In many cases Dr. Siebeck performed trial stimulations of the circulation with strophantine, to see whether there was an additional circulatory factor. Dr. Siebeck feth rather strongly about the interplay of circulatory mechanisms, even in those cases in which the symptoms were predominantly gastric. He usually gave $\frac{1}{4}$ mgm, once daily for 3 - 4 days, and in many cases this caused a striking initial improvement which created sufficient momentum to facilitate the therapeutic effect of other measures. I then asked Dr. Siebeck whether he ever gave insulin in those patients and he answered in the negative. I asked him whether he ever used the method of deep narcotherapy, and he replied "in the last few years, hardly. We gave these people some luminal to make them sleep at night. Bellergal (Sandoz), which contained a mixture of luminal, belladonna and gynergen (ergotamine tartrate), was very helpful."

No intravenous barbiturates were given and Dr. Siebeck had not used, nor was he familiar with, any of the types of abreaction treatment.

Dr. Siebeck was then asked what his explanation was of the fact that these essentially neuropsychiatric conditions were exclusively treated by internists like himself in the German army. He replied: "our psychiatrists were adverse to psychotherapy and did not concern themselves with these problems". Dr. Siebeck went on to say: "psychotherapy is a curious development of medicine and although in other countries it sprang from psychiatry, in this country it somehow did not fit into the pattern of German classical psychiatry. Our psychiatry essentially originated from an interest in and a knowledge of, the organic diseases of the brain, and that was not helpful in developing an active psychotherapeutic interest. The same happened to our psychopathology which remained essentially hide-bound in the concept of constitution in a fixed and static way, as for instance in Jaspers. Therefore, even our psychopathology never progressed beyond schizophrenia, or rather did not concern itself with changes more subtle than schizophrenia. Thus our psychiatrists were all negativistic to therapy until the advent of the shock therapy with insulin, metrazol and electric shock, and that made them still less susceptible to an interest in psychotherapy. They did think in terms of occupational therapy, work therapy and farm therapy, but on the whole one must say that the attitude of psychiatry during the past few years became one of increasing therapeutic nihilism. Therefore, the psychotherapists belonged more and more to internal medicine. We wanted them. There is an institute for psychotherapy in Berlin which offered courses. This institute was headed by Professor Göring, who is Marshall Göring's cousin. He was a stimulating man who collected all those interested in psychotherapy about himself. One of his pupils, von Hattingberg, worked for a time in my department".

I then put the question to Dr. Siebeck whether he himself was satisfied with the way in which he had handled the problems of psychosomatic illness and organ neurosis in his department. He replied: "the demand was enormous. At the beginning things went pretty well, but then the population was scooped out to the depth for soldiers. We have taken people into the army of whom I had said it was nonsensical to take them. It became increasingly difficult. The neuroses always increased enormously when there was war of position. When there was an advance, even the stomach people did well, then when we stopped or when there was a retreat, there came the stomachs. But that was not the whole story. People with mild organic defects such as emphysema or compensated valvular defects of the heart also folled up then. More and more people were conscripted who failed with increasing readiness. Sometimes the stomach and heart cases were spotted at induction centers and sent for specialized examinations, but usually were inducted just the same. According to regulations, people with positive X-ray findings were supposed to have been rejected, but even those were taken time and again. The stomach battalions were supposed not to be used in combat, but once - at the breakthrough of the Americans near Metz - a stomach

battalion was sent into the line, and failed miserably. Most of them had to be taken to hospitals before they even reached the line, but the interesting thing was that a lot of them not only got complaints but developed actual haemorrhages at that point. Of course, they were supposed to be nothing but garrison troops. But even now, after combat is all over, I am getting a lot of new admissions from prisoner-of-war camps. The external and the internal stress, the tensions, sorrows, worry, grief, unresolved inner emotional conflicts, especially the difficulties encountered in maintaining one's loyalty were very great on our side, and expressed themselves in psychosomatic disorders. Many of our young men had become Nazis in their first burst of enthusiasm and against the background of unemployment. When all the brutality that was behind it came to light, disappointment followed, but it was too late. This caused an inner split in many otherwise fine people".

Dr. Siebeck was then asked about neuroses in the civilian population, especially in relation to aerial bombardment. He answered that most of them were acute anxiety states which responded well to treatment, such as rest, removal from the danger zone, and luminal. Most of them were women, but then most of everything was women in the zone of the interior. Neighboring Mannheim had a heavy raid practically every night. He also saw many severe acute neuroses from the Darmstadt area; most of them with tachycardia, circulatory disturbances, slight thyrotoxicosis, sleeplessness, fearfulness etc. They were easily startled by the slightest noise, but the main problem was sleeplessness in these anxiety states.

Of organic medical problems incidental to the war, Dr. Siebeck mentioned field nephritis, which was particularly prevalent in the cold climate of the Russian front. Dr. Siebeck considered it as an infection of the kidneys and the vascular system. One of his pupils published a monograph about it (Appendix 5, No.6).

Dr. Siebeck wrote about some of his experiences with psychosomatic reactions, organ-neuroses and other disturbances of the vegetative system. Some of these writings have been published (Appendix 5, Nos. 1, 2 and 3), but some are still unpublished. In one of his unpublished papers (Appendix 5, No.4), he stressed the interplay of emotional and physical factors such as fatigue and exhaustion, incidental infections and so forth. He makes the statement that there is nothing pyschic without something somatic, and nothing somatic without something psychic. He also stressed the importance of exercise during the period of treatment and rehabilitation. In a more recent paper on neuroses (Appendix 5, No. 5), Dr. Siebeck stated, in obvious reference to the diagnostic policy of the army, that there was too much neurotic fear of the word 'neurosis'. In this paper he also gave a very interesting explanation of the shift of neurotic symptom choice from the musculo-skeletal system to the vegetative system, which had occurred during this war. He stated that frequently the organ choice can be determined by incidental physical factors. He quoted the case of a female patient who originally had a cardiac neurosis, but after an actual episode of dysentery, ceased to

react neurotically with her heart, and developed an intestinal neurosis. Another patient, a young, emotionally somewhat labile man, who at one time had experienced an industrial carbon disulphide poisoning, always reacted by vomiting whenever he became frightened during air raids. But that - Dr. Siebeck goes on to say - is not the only explanation for the fact that the trembling of the last war was replaced by vegetative reactions in this war, a great deal of it is due to attitudes in the social environment. "The realization that trembling does not hold the rank of an illness has obviously quite generally penetrated into the general consciousness. There is the ease and success of its treatment and the attitude of its rejection by the Veterans' Administration authorities. These facts have definitely hammered it in that trembling is no disease; but instead we see neurotic reactions within the realm of the vegetative system, in the circulatory system and especially in the stomach. Trembling with one's extremities does not count any more, and therefore the stomach now does the trembling. This is not the only cause of the many stomach patients with and without ulcers, but it is certainly not the smallest cause". Actual experiences during stress may be contributory, such as the normal acceleration of the heart, the normal reactivity of the stomach to unpleasant stimuli. All that plays a part, but is taken up by the personality as a whole, so that the functional and the organic interplays in an inextricable manner. There are all kinds of transitions and combinations of reactions originally set up by psychological factors, and reactions originally set up by somatic factors; but the most important pathogenic point is the neurotic response to these original sensations and reactions. While it is embarrassing at times to overlook an ulcer because of preoccupation with the neurotic mechanisms of the patient, it is not less fateful an error to overlook the psychogenic features in the pathogenesis of the lesion, because of preoccupation with the organic aspects of the ulcer. It is the vicious circle between functional disorders and organic lesions that has to be approached therapeutically; and therapy should likewise combine an analytically oriented understanding with the proper functionalsomatic therapy of gradual stepping up of physical training after a preliminary period of complete relaxation. It is most important of all, however, to exercise insight and understanding without pampering the patient, and yet build up a readiness in him to function in spite of his disturbances, and develop an ambition to respond to the demands placed upon him.

15. Information received from Geschwaderarzt Professor Dr. Franz Volhard, Professor of medicine and director of the medical department of the University of Frankfurt on Main medical school, and Consultant in Internal Medicine to the 9th Corps Area of the army and the navy. In addition to his military and private hospitals, Dr. Volhard supervised a special stomach hospital, which was run by his assistant Stabsarzt Dr. Hammann in Bad Nauheim. Dr. Volhard stated that Professor Gutzeit in Breslau gave an excellentreport on ulcers of the stomach at the last meeting of consulting physicians held last winter. Dr.Volhard stated that the stomach battalions did as well as could be

expected of them, especially in view of the fact that special diet kitchens were instituted for them. There were also special "ear battalions" for the hard of hearing. Those suffering from cardiac neuroses, however, were not utilized for military duty.

There also was a good deal of jaundice in the German Army. Dr. Volhard saw no deaths from jaundice, but he heard of some. Of other significant illnesses during the war, Dr. Volhard mentioned the many post-diphtheric polyneuritides, as well as the many polyneuritides of other etiology. Toward the end of the war, when difficulties of transport increased, he saw also hunger states with oedemas which were taken to hospital from isolated pockets of troops, that had not been properly supplied. Another striking group of illnesses were the many nephritides, which increased particularly during the second winter in Russia. Dr. Volhard feels that cold and humidity were predisposing factors, but that cases also occurred in well heated offices and among nurses in hospitals. Professor Gutzeit, who reviewed the problem, thought of a new kind of infection. The best treatment was the method of hunger and thirst for a period of 8 days, then the oedemas were flooded out and the heart recuperated. Recently, Dr. Volhard saw 20 Poles and 400 Russians with various radial and peroneal palsies, which were caused by methyl-alcohol poisoning three weeks after ingestion of the alcohol. Many died immediately, others became blind immediately, but some developed polyneuritides after a three week period. The toxic fluid was obtained by these patients at an artificial leather factory.

B. Neuropsychiatry in the German Air Force (Luftwaffe).

1. Information received from Professor Dr. Hans Luxenburger, Oberstarzt (Colonel) der Luftwaffe, Chief Consulting Neuropsychiatrist to the Surgeon General of the Luftwaffe, 1941 April 1945 .

Dr. Luxenburger was interviewed at the Air Force hospital in Possenhofen, Bavaria, where he was in charge of the neuropsychiatric service since 15 April 1945, in addition to his duty as consultant. This hospital was predominantly a medical and surgical hospital, and the neuropsychiatric cases were scattered all over the other services. Among the 800 patients, usually 20 - 30 were neuropsychiatric patients. The number was so small because as soon as a diagnosis was made the patients were quickly transferred to special neuropsychiatric hospitals, such as in München-Schwabing or Eglfing-Haar.

Dr. Luxenburger was first asked about selection. There was no neuropsychiatric selection of air force ground personnel. The examining physician at induction - as in the army - weeded out those with obvious gross neuropsychiatric defects, usually 1 - 2% of the conscripts.

Flying personnel was selected from a neuropsychiatric point of view. All flying personnel, officers as well as enlisted men, were volunteers, apart from a few exceptions. These volunteers came to the air force either directly or from the army. The neuropsychiatric part of the selection consisted in a half-hour interview, either with a psychiatrist or a flight surgeon, who had neuropsychiatric training but was not necessarily a specialist in neuropsychiatry. Most of the regular air force flight surgeons were graduates of the "Ärztliche Akademie der Luftwaffe in Berlin-Wittenau". In spite of the fact that the expressed desire of the candidate to join as a flier was considered an important factor, usually only 70% of the applicants were found fit for pilot training, as the result of the first interview, and 20% were usually definitely rejected. The remaining 10% - or frequently fewer - were held for observation in the Fliegersichtungsstelle (screening station for flying personnel) for 3 - 4 weeks, where they were appraised from the neuropsychiatric and psychological points of view. The main emphasis in this observation was on character and not on intelligence.

Tests were not used at all after 1941, because it was found that there was no correlation between the results of these tests and future performance. Dr. Luxenburger had never anything to do with those tests, even before. The tests were experimental-psychological ones and had been devised or selected by Professor Günther Lehmann of the Kaiser Wilhelm Institut für Arbeitsphysiologie in Berlin-Dahlem, which was later evacuated to Dortmund, finally to Bad Ems. Another contributor to these tests was Professor Hans Fischer, professor of psychological physiology at the University of Marburg. Dr. Luxenburger feels that the contributory cause for the abolishing of all psychological tests in 1941, which was done on Field Marshall Göring's personal orders, was the fact that a number of boys with a good youth movement and party record, as well as sons of important party functionaries, were rejected; but Dr. Luxenburger feels that the tests had really serious limitations because as far as he knew, the dead scoring itself was never a reliable indication of the candidate's ability, but that additional interpretation on the part of the psychologist was required which was only correct when the psychologist also happened to be a good amateur psychiatrist, and a man of common sense. Hence it was justified, in Dr .Luxenburger's estimation, to replace the psychological test procedure by a commonsense and psychiatric appraisal of the personality. Within that setting a certain number of tests of a more general nature remained in use, but at the Sichtungsabteilungen (screening stations) only. These tests were evaluated in a general, "almost layman-like manner", and were not really scored. These tests included mathematical tests, writing of themes etc. There were tests in competitive athletics, tests of courage and of powers of decision, for which broad jumps, scaling walls and so forth could be used. The minimum of education for enlisted flying personnel was eight years of grammar school, i.e. elementary school education, obtained between the ages of 6 - 14 years (Volksschule). For officers,

gymnasium (equivalent to high school and two years of junior college) was required. At the beginning of the war, the majority of the pilots were officers, but later there was a relative increase of enlisted pilots.

The psychiatric half-hour interview mentioned above, consisted in taking a family history, personal history, health record, educational record and statements about emotional preferences, hopes and plans. It was aimed at an appraisal of the total personality, especially of the character, although it was appreciated that character and intelligence were hard to separate. The speed of understanding, apperception and decision, the ability to concentrate, and the adaptability of the candidate, were evaluated in this interview, but not by tests. Each psychiatrist completed the examination of 20 men per day. Dr. Luxenburger admitted that the examination frequently took less than half an hour. The greatest factor in coming to the right conclusion was common sense, aided by psychiatric knowledge of human beings, and experience.

After the candidate for flying service was accepted following this interview, further elimination for neuropsychiatric reasons occurred only if and when the man showed abnormal traits. Dr. Luxenburger had no figures as to how many were eliminated during their training period. Records were destroyed, some by bombing, others deliberately before the enemy came. All the figures and statistics were in the hands of the Chef des Sanitätswesens Generaloberstabsarzt Schröder at Lager Saalow near Zossen, Berlin.

Dr. Luxenburger stated that as far as fitness of the German air force from the neuropsychiatric point of view was concerned, things went well until the summer of 1943. Since then the intelligence standard dropped and the qualities of adaptability, "hard courage", tensile strength and endurance was lacking in increasing numbers of flying personnel. Dr. Luxenburger was asked as to what he ascribed this turn in events. He said, "first of all the examiners were younger and not as experienced, and accepted people who should have been turned down; secondly, the requirements for quantity became greater, especially on the Eastern front; thirdly, training became poorer because of lack of aviation gasoline. The result was that more and more people were under observation in screening stations, and there was an accumulation of personnel which was obviously less capable of bearing stress and more fatiguable than before, and the admissions to rest homes increased."

The treatment used for these increasing breakdowns was an educational form of psychotherapy, with therapy of the vegetative disturbances. The psychotherapeutic measures used were persuasion, hypnosis, suggestion and psychocatharsis of the Jungian type. No drugs were used. Benzedrine had been used at first, but was soon abandoned. Narcotherapy, insulin shock or insulin sub-shock were not given, nor were the methods of narcotherapy and insulin sub-shock known to Dr. Luxenburger. No abreactions were performed either,

and Dr. Luxenburger did not appear to have any knowledge of the use of abreaction treatment in the neuroses. Dr. Luxenburger said that most of the system of treatment had been worked out by Professor J.A. Schultz, Oberfeldarzt der Luftwaffe, who was the Chief of the Luftwaffe department at the German Institute for Psychology and Psychotherapy in Berlin, W. 62, Keithstrasse 41.

The word coined for these neuroses in flying personnel was "abgeflogensein" (which freely translated means: 'to be through as a flyer', or 'to have had it as a flyer'). Dr. Luxenburger considered this as an unfortunate term: "first of all because everyone familiar with psychiatry knew of course what it really was. This condition occurs not only in aviators, but can be elicited by any excessive stress. It is a sort of neurasthenia or neurasthenic anxiety neurosis. There is nothing in this 'abgeflogensein' that is not also perfectly well expressed by the good old psychiatric categories, anxiety neurosis or neurasthenia. To be sure, this neurosis in aviators has a certain coloring different from a similar neurosis in a civilian, but no more so than a neurosis in a minister of the gospel differs from the neurosis of a coalminer". Apart from this unfortunate term, a great number of cases of neuroses in the German air force went under other different names, namely under names of various organic diseases and under the name of psychopathy. But whatever the name, neurosis became a sizeable problem after 1943. Dr. Luxenburger estimates that 15% of the flying personnel in the German air force became disabled by neurosis, if one includes those diagnosed as psychopathy and psychosomatic illnesses. If the latter two groups are excluded, and only those diagnosed as neurosis or "abgeflogensein" are counted, their number would account for 5%. As psychopaths, Dr. Luxenburger defines "variants of personality who are negative in terms of value and who are poorly adapted to their environment, so that there is constant conflict with the environment, in the course of which a psychopath may develop a neurosis". Before 1943, there were very few such psychopaths in the German air force, but after 1943 they increased. When Dr. Luxenburger was asked as to what he regarded as the cause for this increase, he replied : "Poor selection, because the material became poorer and the need greater. There were many accidents, many losses on the Eastern front, also in the Mediterranean, especially over Malta".

I then asked Dr. Luxenburger the question as to what he considered the most important neurosis-producing factor in the flying stress of German flying personnel. He replied: "Expectation". "They sit and wait in the cockpit on the alert ready to take off, that is nerve racking. These fighter pilots got only three hours sleep, then they were called again on the alert". Dr. Luxenburger was then asked what the main neurosis-producing stress factor was in bombardment personnel, including pilots. He replied: "Neurosis in bomber personnel has played only a very small role. There hardly ever were any, especially in the last three years, but even before that the incidence of neurosis in bomber personnel was insignificant". Dr Luxenburger felt that

this striking difference in the incidence of neurosis was due to the fact that the fighter pilots were younger and more difficult people.

Dr. Luxenburger stated that there was no limitation of tour, i.e. no operational limit for flying personnel in the German air force, and that every flyer had to keep on going until he was either killed, severely wounded, or until there were some disabling nervous symptoms, which indicated he had come to the natural limit of his resiliency to flying stress, and had to be considered "abgeflogen". However, it was noticed that the excessive waiting at the start led to premature failure. For that reason some prophylactic measures were taken and it was arranged that after a certain number of hours of waiting in the cockpit, the pilot was relieved; and in addition a certain number of days of full rest were instituted. That long waiting on the alert was necessitated by the fact that while the German air force had been warned through their detector devices of an approaching allied bomber fleet, they had no way of predicting exactly where it was going, and therefore fighter pilots had to be put on the alert in their cockpits ready to take off and to attack and ram the enemy bomber formations, over a relatively wide area.

Every German air force aviator was entitled to 2 - 3 weeks leave per year. He could receive additional leave only on medical grounds. Since it was generally felt that 2 - 3 weeks leave per year was decidedly not enough, an opinion in which all commanding officers agreed, much use was made of medical leaves. The usual medical leave at a rest home for flying personnel was of 4 - 6 weeks duration. Then the chief physician at the rest home could request an additional home leave through the flyer's commanding officer of usually 14 days duration. In severe cases of flying fatigue, this could be prolonged again and again, up to 6 months in a rest home. This policy was "slightly infectious" and led to aggravation, although Dr. Luxenburger feels that cases of outright malingering had not occurred. If there was any suspicion of aggravation, the patient was sent to a screening station. There was a screening station connected with every air force hospital.

I then asked Dr. Luxenburger whether neurosis was a considerable problem in the German air force. He replied in the affirmative. It was greater than in the armed forces as a whole, just as in the navy it was a greater problem with submarine personnel. He felt that flying personnel and submarine personnel had the greatest incidence of neurosis in the German armed forces. I then asked him whether neurosis was the greatest single medical problem in the German air force. He replied, "No. The greatest problem was the gastric and intestinal diseases, as they were also in the army, due to nutritional factors. The next biggest problem were the neuroses." Dr. Luxenburger then continued :

"What was as good as completely missing, were the shaking palsies of the type seen in the last war. I have only seen five of these cases in this war. Their place was taken by the gastric neuroses in this war. It is due to this fact that different diets became available in practically every army and air force post. Those patients were first diagnosed and listed as stomach diseases pure and simple, then in hospital attempts were made to differentiate them".

Dr. Luxenburger said that he had seen very few cases of air sickness. A not infrequent complaint was 'grey-out' on quick ascent or descent, and some became neurotically fixed. Dr. Luxenburger stated that passing out in the air was not a great problem. It occurred practically exclusively from true anoxia at great heights, although he admitted that in some cases similar syndromes developed from an expectation neurosis. He continued: "We like to avoid the term 'hysteric' and call it 'psychogenic'. Hysteria is all tied up with ideas of wishes and desires and has a bad taste. We also avoided the word 'neurosis'. We simply said 'psychogenic' and added a descriptive term of the organ system involved."

Dr. Luxenburger then expounded on J.H. Schultz's theory of the neuroses which he considers a workable one, and which he adopted in his own thinking and terminology. J.H. Schultz distinguishes four types: 1: the "extrinsic neuroses" (Fremdneurosen), which are mild, frequently merely imitative; 2: the "marginal neuroses" (Randneurosen), which occupy the margin of the psychic personality, and which particularly include the psychosomatic states and the organ-neuroses; 3: the "layer neuroses" (Schichtneurosen), which penetrate into a deeper layer of the personality and include the obsessive-compulsive neuroses; and 4: the nuclear neuroses (Kernneurosen), which are the most severe because they involve the nucleus of the personality, which include the sexual abnormalities such as homosexuality and other deviations caused by early childhood experiences.

Dr. Luxenburger was then asked how many of his treated cases of neuroses were returned to flying duties. He replied 30%. The remaining 70% were sent to ground duties. Nobody was discharged. "We had a special flak battery for neurotics in Dortmund. The commanding officer of that battery was a psychotherapist, trained by Professor Göring, as was the station physician. Good results were reported from there, but it was only in existence for six months. A good many people who were assigned to that flak battery improved sufficiently to be transferred to other ground duties."

Dr. Luxenburger then reiterated that for the U-boat personnel in the navy, the problem of psychoneuroses was of similar relative magnitude, as for flying personnel in the Luftwaffe. He referred me to Dr. Creutzfeld, a former student of Dr. Bonhoeffer in Berlin, now professor of psychiatry in Kiel, and chief neuropsychiatric consultant to the German navy.

Dr. Luxenburger believed that the post-traumatic syndrome called "Hirnleistungsschwäche" was predominantly an organic condition. It occurred in post-concussional and post-contusional syndromes.

Dr. Luxenburger recalled that in the early days of the Battle of Britain, there was a condition in bomber personnel known as "channel stomach", but he does not remember anything about it but the name. That was before he was officially connected with the air force.

As to suicides, Dr. Luxenburger feels there was no significant difference in incidence between the army and the air force. In 1941, when Dr. Luxenburger made his survey, the percentage was very low, under 1%, maybe even under one per thousand. There were also very few self-inflicted wounds. Dr. Luxenburger saw only very few of these cases medico-legally "and they were nothing but poor soldiers". According to J. H. Schultz, who later worked on this problem, suicides did not significantly increase except for suspected suicides masked as 'accidents'. Accidents increased greatly in 1943 and J. H. Schultz considered the possibility that a good many of them may have been actually suicides.

Dr. Luxenburger does not think much of the recent chief consulting psychiatrist to the army, Dr. De Crinis.

Dr. Luxenburger saw no new diseases and no cases of epidemic encephalitis in the German air force.

2. Information received from Dr. Gustav E. Störring, Stabsarzt der Luftwaffe, Associate Professor of Neuropsychiatry at the University of Göttingen (in Professor Ewald's Department) - on leave of absence.

Dr. Störring had a great deal of experience with Luftwaffe flying and ground personnel. He had interesting assignments as special welfare officer for psychiatry and mental hygiene, with combat installations of the Luftwaffe in France. In addition, he was for several years in charge of the neuropsychiatric section of the large Luftwaffe hospital in Paris-Créchy. In the latter place he had diagnostic, psychotherapeutic and medico-legal experience.

Dr. Störring was interviewed at Dr. Kaltenbach's hospital in Königstein in Taunus, near Frankfurt on Main, where he is the medical officer representing the Luftwaffe. Dr. Störring is the son of the well known philosopher and psychologist of the same name. He is the author of a paper which for the first time pointed out the fundamental differences in pattern between the neuroses in the last war and those in the present war, and he first described the shift of the syndromes with shaking and palsies of the last war, to the psychogenic headache syndromes, and the functional gastric and cardiac manifestations of the present war. In his paper: "Die Verschiedenheiten der psychopathologischen Erfahrungen im Weltkriege und im jetzigen Krieg und ihre Ursachen" Münchener Medizinische Wochenschrift, No.2, 25, 1942,

Dr. Störring also discussed the fact that at that time of the war (the paper includes the period up to 1941), neuroses on the whole had been less frequent than in the last war. He ascribed this to factors of morale engendered by the intensive National Socialist indoctrination of the soldiers. Dr. Störring now feels that his estimate may have been somewhat optimistic because he underestimated, even then, the true extent of the psychosomatic gastric and cardiac afflictions, and he feels now that the far greater support of morale came from the success and relative ease of the combat activities during that period, than from the far less decisive element of indoctrination which later proved less effective when things got tough. He stated, with a smile, he wished now he had never written that paper.

Dr. Störring is a rather pleasant, vivacious and sensitive man, who, one understands, can easily be swayed by his emotions to overestimate one or the other factor. He is now engaged in writing a criticism of the fundamentals of the Nazi regime from the psychopathological point of view entitled "the Psychopathology of Hitlerism", in which he also attempts to discover for what emotional reasons the German people originally accepted it. He is doing this work, together with a Dr. Pfander, a lawyer in Darmstadt, where he lives on Höhenweg 23. Dr. Störring can be expected again to be swayed emotionally by one side or another in his efforts, as he was obviously carried away by his emotions in his first famous paper on the war neuroses. Still he is a man of understanding and originality, who may be expected to come up with something illuminating, as it cannot be denied that he did hit on something important, namely the shift of symptomatology of the neuroses, in his earlier paper.

Dr. Störring had been in Königstein since 1 May 1945. He particularly enjoyed his work as psychiatric welfare officer ("Wehrbetreuungssanitätsofficier") with the air force on the Western Front. He handled all kinds of psychological problems, with what was essentially preventive psychiatry. Every case of deviation as it occurred among troops, every case of attempted suicide, every case of AWOL, was gone into. Unfortunately all records were destroyed by the High Command. Punishments were more severe, especially in AWOL cases, than during the last war.

There was no operational limit for flying personnel. People could only be grounded on medical grounds at the commanding officer's discretion. The predominating symptoms in flying fatigue ("abgeflogensein") were: dizziness, headaches, anxiety, sleeplessness, and other neurasthenic complaints.

Dr. Störring feels that the single most effective preventive measure against "flying fatigue" was stimulation of ambition for decorations. Therefore new decorations were always brought out. The flying personnel were under the spell of ribbons, and the majority of them wore them at all times. "The German reacts to praise and blame like a child. He is a man of feeling, with all its assets and liabilities". Dr. Störring then stated that in his book on the

psychopathology of Hitlerism, he discusses this quality and how hitlerism arose from the fundamental German character.

Dr. Störring stated that his treatment of the neuroses in aviators and other combat and ground personnel was strictly psychotherapeutic, and included utilization of group therapy. His line of approach was "to tell the patient 'we all have a sort of low animal in us ("innerer Schweinehund"), but we have to cope with it and overcome it. We all have that in us'". Thus an identification with the patient was established. If necessary this could be reinforced by bellowing at the patient in a loud and forceful voice ("anbrüllen"): "We all must eat dirt in war, and so must you". It could also be implied that the patient was lucky to be treated medically instead of being tried on a charge of cowardice, which would lead to his being shot, and it was allright to threaten the patient with the "drawing up of charges unless he was successful in controlling himself and getting well". The patients were grateful for that treatment and they thought the doctor understood them. They also took the threat that charges could be brought against them quite seriously. Then he used to tell them: "If you do not pull yourself out of this, and if you have a relapse, you come back here, but then we will not let mercy come before justice again". "Then I would have to say, 'you are a coward'. Now I think that you merely had an episode of softness which can happen to any of us. Then after that preamble, I made a point of talking about the worries and sad experiences of the patient, and tried to discuss them and help him solve them. People who broke down, frequently had real worries. Others were somewhat heavy, slow individuals, and some were borderline mental defectives. We estimated that 15% of the ground personnel who broke down were in the latter category. The predominant reactions among these were either to run away or to commit or attempt suicide."

The general directives for psychological treatment were worked out by the "principal expert for psychiatry and mental hygiene of social welfare medical officers, and National Socialist Leadership medical officers", ("Sachbearbeiter für Psychiatrie und seelische Hygiene der Wehrbetreuungssanitäts-offiziere, und N S Führung Sanitäts-Offiziere"). Dr. Störring feels that the Wehrbetreuungssanitätsoffiziere (psychiatric social welfare officers) were an excellent institution in the German air force, and were able to do a great deal of preventive work. Dr. Störring himself was in this capacity in charge of an area in western France.

As to the success of the treatment of flying fatigue, Dr. Störring said that in the first years of the war, many treated patients returned to flying, usually after 4 - 8 weeks in a rest home. There was a generally great preference for flying as compared with ground status. Probably the shortages of petrol contributed in keeping up an appreciation of flying, which was always regarded as a privilege. Furthermore, there was group pressure of opinion which forced the aviator, whenever he could, to stay on flying status. But the quite general desire for flying helped to reinforce this attitude. There were cases of lack of moral fibre, but determination and disposition of these was a

command function and not a medical problem. Commanding officers in general tended to assume that every hysteric reaction was at the least a semiconscious evasive reaction. Dr. Störring feels that this policy was definitely overemphasized. Professor Göring, on the other hand, had seen to it that the psyche was recognized officially, but a commanding officer whom Störring remembers used to say angrily: "There is no psyche. There is only combat readiness or no combat readiness". Commanding officers have frequently been unjust to fliers with genuine neuroses. For cowardice before the enemy, the death penalty was mandatory. Dr. Störring saw such cases for medico-legal appraisal. One of them was sleepless, inhibited and depressed. Dr. Störring excused him on medical grounds; later the man recovered and returned to flying. This is the only case who had been condemned to death for cowardice before the enemy of whom Dr. Störring had personal knowledge. He has no personal knowledge of anyone who actually had been executed, but the flying personnel thought that some cases had been executed and that is probably all that mattered. Generalfeldmarshall Sperrle was in charge of all these policies in the air force, and probably could give more detailed information.

Dr. Störring does not know whether any officers ever lost their rank because of failure as a flier. Dr. Störring feels that the threat implied in the attitude that neurotic weakness constituted a form of cowardice for which a man could be charged, tried and condemned to death, had a bracing, reactivating effect in some of these neurotic cases. A man could also be condemned to death as a malingerer if it could be proven that he had attempted to escape dangerous or hazardous duty; the patients knew that and many tended to reproach themselves for such intentions. Therefore, it was particularly useful to give the patient a face-saving concept of a temporary attack of softness, which raised their self-respect and increased their determination to pull themselves out of it in order not to fall really into disreputable cowardice.

Other cases requiring medico-legal examinations which Dr. Störring performed, were particularly various crimes and misdemeanors committed under pathologic intoxication. Dr. Störring found that twilight states under alcohol were much more frequent in the air force than in civilian life. An offence committed under pathological intoxication, usually resulted in the man being declared irresponsible for the crime committed while in that state; but officers who committed such offences even if declared not responsible legally usually lost their rank according to paragraph 33a of the legal code. They were not broken by the commanding officer, but through higher echelons by way of Berlin. In the cases of air force officers, loss of rank had to be confirmed either by Göring or Hitler. All cases of death penalty had to be signed by Hitler himself. A deterrent measure, which Dr. Störring thought very ingenious and helpful, was to put officers in regular rotation on orders to witness trials of people for crimes committed during alcoholic intoxication, so that they could see for themselves that otherwise decent officers could commit beastly things after they were drunk

("Schweinereien"). Dr. Störring feels that this "visual instruction" was very effective. He regrets, however, that it was not carried out more consequently and extensively.

Homosexuals were very severely punished. They all got long terms in prison ("Zuchthaus").

Dr. Störring stated that flying fatigue ("abgeflogensein") was far more prevalent in fighter pilots than in bomber pilots and other bombardment crew members. He feels that this was due to the fact that the bomber personnel was made up of "harder types of human beings". Weaknesses in the personality of the more mercurial fighter pilots were pointed out in a book by Skawran, entitled "Der Jagdflieger" (The Fighter Pilot). This book was withdrawn from circulation because it was not too flattering to the personalities of the fighter pilots. The book did not consider greater stress as a cause of the greater number of breakdowns among fighter pilots, nor does Dr. Störring think that different degrees of stress play a great role in that problem. It is mainly the constitutional type of the personality of the sort of man who becomes a fighter pilot that is at fault.

While not realizing that the differences of stress which were placed upon fighter and bomber pilots respectively in the German air force, Dr. Störring did recognize stress as a factor of general importance, when the discussion came to the psychosomatic illnesses. Dr. Störring volunteered the following : "There was an immense number of ulcer cases because the emotional load really acted upon the stomach. There were also heart cases, mostly due to the fact that there was a habit of senseless smoking rampant among young people. Many young people died from heart disease at the age of 20 years".

Of organic neurological illnesses, Dr. Störring saw a number of cases that developed epileptic seizures following carbon tetrachloride poisoning, also some cases of tetraethyl-lead poisoning in persons who filled air planes with aviation gasoline. In addition, he was interested in cases with pseudopsychopathic reactions in thalamic lesions.

C. <u>The precarious state of psychotherapy and psychotherapeutic training in Germany before the war, as expressed in confidential reports by Professor Kretschmer and Mauz</u>.

These confidential reports were found when I made a rather superficial search of Professor Rüdin's confidential files at the Deutsche Forschungsanstalt für Psychiatrie in Munich. These reports were occasioned by observations made at the 9th International Congress for Psychotherapy in Copenhagen in 1937, and their purpose was to stimulate interest in the creation of facilities for psychotherapeutic training at German Medical Schools. They were addressed to Professor Dr. Wirz, principal expert on the Staff of the Vice-Führer (Reichsamtsleiter am Stabe des Stellvertreters des Führers), and copies were

transmitted to Professor Rüdin in Munich. In his letter of transmittal to Professor Rüdin, Professor Kretschmer writes: "..... It will be very important to give additional weight to these reports by personal representation with Mr. Wirz. Since the older separate schools (of psychotherapy) have hardly any supply of young trainees, it is not necessary on our part to interfere in any way with the personal activities, in their own private circles, of these single representatives themselves. But it is urgently required to oppose energetically their repeated attempts to advance their position by means of organizational activity and to assume the role of official representatives of German psochotherapy. This would be an equally great danger for psychiatry and the practicing neurologist, as for a healthy development of psychotherapy itself. With friendly greeting, your E.Kretschmer".

In his confidential report of the proceedings of the Congress, entitled "Vertraulicher Bericht über den 9. Internationalen Kongress für Psychotherapie in Kopenhagen vom 2. bis 4. Oktober 1937", dated 11 October 1937, Professor Mauz reported that among the foreign (non-German) delegates the adherents of the psychoanalytic school (Freud) predominated. The German participants, however, were split into three groups, namely the Freudian, the Adlerian "in its advanced new development by Künkel", and the Jungian. Professor Mauz stated that "Foreign Individual-Psychologists seem not to have been present", because "the name Adler was not mentioned throughout the entire proceedings". After a discussion of the various divergences of opinion among the German representatives of psychotherapy, Dr.Mauz made the statement that he was impressed with the fact that a supply of young recently trained medical graduates was completely lacking among the psychotherapists. He continued: "Even Herr Göring and also Herr Boehm are fundamentally not very favorably disposed toward the training of lay-psychotherapists. Nevertheless they are forced to propagate it, because, as they admit themselves, any supply of young medical graduates interested in such training is completely lacking. One could hear the opinion expressed, that this was merely due to the fact that the psychotherapists had no opportunities to teach at medical schools. If I carried away one definite conviction from this congress it is the one that a transplantation of these single residual representatives into universities would not contribute toward the goal of winning the young physician for a medical psychotherapy and awakening in him the desire for training in medical psychotherapy. None of the three schools are excepted. The goal can only be a medical psychotherapy within the whole of medicine. This is essentially also Professor Göring's goal. He has the right intention and labors for it according to the best of his powers. But I believe that he fights on a forlorn post. He realizes the weaknesses and dangers of the present state of affairs and understandably seeks for explanation. Fundamentally I think he realizes at times that little could be gained by simply transplanting the single representatives into universities. On the other hand, he is of the opinion that the students are far too much biassed by materialistic thought and have no interest yet at all in psychotherapy". Dr.Mauz did not agree with the latter view, "because

we could not confirm it on the basis of 11 years' experience at the clinic in Marburg. For many years, three of us (Kretschmer, Mauz and Enke) have held clinical lectures which are interspersed with medical psychology and psychotherapy and in part are devoted exclusively to those problems. Every one of us had in all semesters a full lecture hall and could confirm the existence of greatest interest for these questions in our young medical men." "One can therefore not say that the young medical man and the German physician had no interest in medical psychotherapy, or that clinical psychiatry had no opportunity to satisfy that interest."

Dr. Kretschmer in his report of 25 October 1937, stressed the opinion that it was unlikely that the split up separate schools of psychotherapy in Germany could achieve a real synthesis or create an imposing whole on a large scale. "All these schools orginated from the disciples of Freud, among whom Adler and Jung later created their own schools and independent accomplishments of thought. New results in the field of psychotherapy can only be obtained slowly in research extending over decades. It is therefore clear to anyone who knows these conditions, that it is, with all appreciation of good intentions, quite impossible to place the old teachings of Freud and Adler and the schools built thereupon, upon an entirely new spiritual and methodological basis within the short span of a few years. Their adaptation to the new conditions can only be a merely formal one, and their amalgamation can only be, in the main, one of external organization.

"The need of German medicine and especially of neuropsychiatrists (Nervenärzte) for a good psychotherapy is great. But it is my firm conviction that a psychotherapy recognized by German science and assimilable by medical practitioners cannot be founded upon the old foundations of Freud and Adler, nor on the basis of the split-up old special schools. It may be possible, so far as generally valid observations are contained therein, to take them over into our armamentarium of medical knowledge after a thorough critical sifting. But the basis for the new edifice of our psychotherapy can only be gained upon broad clinical foundations, as we have started to do for a number of years. The meaning of our clinical psychotherapy is not primarily the analytic splitting of psychic life, although analysis in critically limited form cannot be dispensed with. Its starting point is rather the constitutionally and hereditarily bound total personality; its goal the building and forming of the personality according to its inner biological laws.

"The interest for this kind of psychotherapy which was fundamentally developed by myself and my disciples, was extraordinarily great on the part of students and physicians, and the attendance of classes and lectures on this subject was always lively. Also in other psychiatric university clinics, tendencies, at least, in this direction are present. A special section for psychotherapy has been organized for several years already by the German Association for Neurology and Psychiatry, according to the expressed desire of the national-socialist government for large scale coordination. As soon as some of my disciples shall occupy chairs of psychiatry, the scientific and practical training of a good supply of young psychotherapists will be

achieved quite automatically. This organic development will progress the speedier and the more successfully, the less it will be disturbed by the attempts of the representatives of the older special schools, which have been united only on the surface, to penetrate, by means of special organizations, local groups, teaching appointments, official courses and other means into the mangement of medical practice and of the universities.

"Also we have on principle the gravest objections to the training of lay psychotherapists, frequently practiced there. On the other hand it is far from us, to make any difficulties for those medical psychotherapists concerned, as long as their activities are limited to their private work and to their internal scientific exchange of ideas among themselves, in so far as the state itself approves of that.

"May I beg you to keep this report strictly confidential and to use it only for your personal orientation. I am gladly at your disposal for further verbal explanations if you give me the opportunity to do so."

"Heil Hitler!
Signed: Kretschmer".

It is not surprising, therefore, in view of all these confusions and professed limitations, such as Kretschmer's "building and forming of the constitutionally and hereditarily bound total personality according to its inner biological laws", that a reasonably good quality of psychotherapy was not practiced in the German armed forces, except by a few inspired internal medical men such as Dr. Siebeck, and by the few of Professor Göring's associates and teams of lay therapists in the Luftwaffe. The neuropsychiatrists themselves confined their therapeutic activities to the repressive-suggestive treatment of the conversion symptoms of gross hysteria by means of strong and painful galvanic currents, and to shock treatment of the psychoses; they abandoned the psychosomatic disorders and the organ neuroses, the one main field which cannot be handled without psychodynamic understanding and psychotherapeutic endeavour, completely, and left them at the mercies of the specialists in internal medicine. In the overall picture of dealing with neuropsychiatric casualties, the German armed forces relied mainly on administrative organizational measures for the utilization of partly disabled personnel in the environmental setting of special formations, such as the special formations and punishment formations for the psychopaths, and the stomach batallions, the special flak batteries and other limited service formations for the neurotics.

D. Neurosurgery in the German Army and Air Force.

1. Information received from Generalstabsarzt der Luftwaffe Professor Dr. W. Tönnis, Chief Consulting Neurosurgeon to the entire German armed forces. General Tönnis was consulting surgeon to the Luftwaffe from the beginning of the war till December 1941, after which he became Chief consulting Neurosurgeon to the Luftwaffe in December 1941, and Chief consulting Neurosurgeon to the entire German armed forces in 1943. He held the latter position until the end of the war. General Tönnis was interviewed on May 29, 30 and 31 at the German army and airforce medical center in Bad Ischl, Austria, where his Neurosurgical Center, formerly located at Berlin-Reinickendorf, was evacuated to in October 1943. This interview was held jointly with Wing Commander Dennis Williams, R.A.F.M.C., and Major George E. Smyth, R.A.M.C., who submitted separate reports. General Tönnis and his associates were very cooperative in imparting information freely, and in putting their publications, as well as publications of other colleagues, their own unpublished statistics and notes and their excellent motion picture records at our disposal. The publications reviewed included the following subjects: the air transport of the sick and wounded as a medical problem (appendix 6, No.1); circulatory disorders after brain operations (appendix 6, No.2); the indications for myelography (appendix 6, No.3); the operative exposure of the lumbo-sacral plexus after gunshot wounds of the pelvis (appendix 6, No.4); pathogenesis and treatment of the gunshot wounds of the brain (appendix 6, No.5); the injuries of the brain, spinal cord and peripheral nerves as handled by the Medical Corps of the Finnish Army during the Russo-Finnish war of 1939-1940 (appendix 6, Nos. 6 and 7); gunshot wounds of the brain (appendix 6, No.8); the origin of increased intracranial pressure and of prolapse caused by brain wounds and their sequelae (appendix 6, No.9); the damage to the brain caused by the injury of blood vessels incidental to open wounds of the brain (appendix 6, No.10); late abscesses of the brain caused by war injuries and their treatment by total exstirpation (appendix 6, No.11); closed injuries of the brain (appendix 6, No.12); the treatment of gunshot wounds of the spinal cord (appendix 6, Nos. 13 and 21); the operative treatment of gunshot wounds of the peripheral nerves and its chances for success (appendix 6, No.14); directives for the treatment of the gunshot wounds of the brain and the evaluation of their sequelae (appendix 6, No.15); the associated movements of the extremities in brain-injured patients (appendix 6, No.16); the pathology of traumatic meningitis due to gunshot wounds of the brain (appendix 6, No. 17); a review of the subject of head-injury (appendix 6, No.18); the medical and surgical care of injuries of the brain (appendix 6, No.19); the proper time for operative treatment of gunshot wounds of the peripheral nerves (entitled: "When shall the gunshot wounds of peripheral nerves be operated upon?") (appendix 6, No.20); and the possibilities of using sound waves of high frequency as an aid in diagnosis (appendix 6, No.22).

Late in 1939 a special military hospital for injuries of the central nervous system and the peripheral nerves ("Fachlazarett für Gehirn- und Nervenverletzte") was founded in Berlin-Reinickendorf and Dr. Tönnis was put in charge of it. In addition, he supervised the work of neurosurgical units in the field, and spent himself various periods operating and teaching at the active war fronts, later especially in Russia. The central neurosurgical hospital in Berlin had 2000 beds; this, according to Dr. Tönnis, was "merely a drop in the bucket", and the main purpose of the Berlin hospital was to serve as a model and teaching center, and as a center for research. There complete statistics on all patients were kept, from the time of injury until 3 years after discharge from the hospital. One of the main departments of the hospital in Berlin-Reinickendorf was its rehabilitation center, which included the former Olympic Stadium in Berlin, with its athletic fields, arenas and its facilities for water sports, which were part of the hospital area. All brain injured were put through a very active rehabilitation program, as soon as their physical state and the surgical state of their wounds permitted and if they were free from epileptic fits. This rehabilitation program was aimed at increasing exercise tolerance by intensive sports and competitive athletics, in order to prevent invalidism from posttraumatic syndrome ("Hirnleistungsschwäche, which literally translated means "brain performance weakness"). The whole program of rehabilitation usually required a year in cases with severe injuries. A period of rest of up to 2 to 3 months duration was followed by a period of special remedial exercises adapted to the specific disability, then, in increasing measure, by individual athletics, group athletics and competitive athletics and sports. Professor Tönnis then demonstrated a motion picture sound film taken by himself and his collaborator, Dr. H. Pittrich, which gave a very excellent account of this rehabilitation program in all its aspects, including also a special part devoted to the speech training of aphasics. An interesting incidental finding encountered in the rehabilitation training and well illustrated in this documentary motion picture film was the fact that cases with cerebellar ataxia, even severe ones, swim remarkably well and with apparently excellent coordination of swimming movements, as compared to the severe ataxia of the gait and of voluntary purposeful movements of the extremities. 80% of the patients in the Berlin Neurosurgical center were army personnel, 5% civilians, a very small percentage Navy personnel, and the remainder air force personnel.

Neuorsurgery in the field was in the hands of specialized neurosurgical teams, altogether 5 in number, which were shifted to those parts of the war fronts where they were most urgently needed at the time. At first their policy was to evacuate as many patients as possible by air to Berlin; but later, as distances increased and aviation gasoline became scarcer, an increasing amount of definitive neurosurgical treatment was carried out at the front. In 1942 those neurosurgical teams were motorised. The teams had special neurosurgical hospitals at their disposal. Patients were admitted to these hospitals directly from first aid stations in the field. The time which elapsed between the injury and admission to these hospitals varied from 1 hour to 6 days. According to a very excellent motion

picture record of "Neurosurgery under field conditions" which Dr. Tönnis showed to us and of which he later gave me a copy consisting of 5 reels of sound film taken for the purpose of teaching, (this film was turned over to CIOS Secretariat), the time of admission of the cases shown in this teaching film was between 3 and 5 days after the injury. Autopsies were performed in all cases of death, even in those patients who reached the hospital dead or in a moribund state. The postoperative mortality was highest in the group of patients admitted on the third and fourth days, presumably because the patients admitted earlier had a better chance to benefit from the treatment given, and because among the patients admitted later only the good operative risks had survived the hardships of transport (table 1).

TABLE I

Results of treatment of 66 uncomplicated penetrating gunshot wounds with positive bacteriologic findings in the brain wound.

Day after injury on which patient was first treated.	No. of patients	Surface infection	Infection only extradural	Infection also intradural	Deaths from meningitis	Deaths from other causes
1st Day	3	3	-	-	-	-
2nd Day	16	6	9	1	1	3
3rd Day	18	6	8	4	3	1
4th Day	12	3	6	3	3	-
5th Day	11	3	6	2	1	-
6th Day	6	1	5	-	-	-
	66	22	34	10	8	4
		56(84.8%)		(15.1%)	(12.1%)	

Apart from these factors, the skill of the neurosurgeon or neurosurgical team taking care of the injured greatly affected the results. The mortality among groups of patients inadequately taken care of was two to four times that of patients taken care of by Dr. Tönnis himself while on detached Service with frontline Neurosurgical Units (table 2).

TABLE 2

Results of treatment of uncomplicated penetrating wounds (Type 1) of the cranial vault.

Quality of surgical care	No.	Deaths from meningitis	%
Inadequate	96	35	36.4
adequate	151	24	15.9
adequate	106	10	9.4

Table 2 gives comparative mortality figures for 96 cases who had been cared for inadequately (bacteriological findings in that group are unknown), with two series of 151 and 106 cases respectively of whom I took care myself. The mortality rate in the former was 36.4%, and contrasted to my own of 15.9% and 9.4% respectively.

The main objective of neurosurgical treatment of the wounded were removal of hemorrhage and prophylaxis against infection. Removal of all hemorrhage was considered so important because it was found that all subdural empyemata were due to infected subdural hematomata. The steps of neurosurgical care, which were initiated after a preparatory blood transfusion was given, were as follows: 1. Debridement. 2. Closure of the gap in the dura, in order to avoid secondary infection. 3. Prophylaxis against infection of the spinal fluid, which was begun as early as possible after repeated lumbar punctures had revealed the presence of more than 200-300 cells in the spinal fluid. This prophylactic treatment consisted in daily replacement of the spinal fluid by insufflation of air through the lumbar route, which was continued as long as the spinal fluid cell count remained elevated beyond the above mentioned limit. This treatment was always carried out under anesthesia (with scopolamine, eukodal and evipan) in order not to upset the circulation. These treatments were given in all neurosurgical installations under Dr. Tönnis's direction even in forward areas. Dr. Tönnis stated that death from meningitis was due to toxic paralysis of the vital centers in the brain stem, and that this treatment prevented the infection of the spinal fluid from reaching toxic proportions.

Dr. Tönnis then discussed some of the statistics concerning the results obtained by him and his collaborators. The prognosis of patients with tangential shots which opened the dura was particularly good, (table 3), the total mortality being 12%. In a series of 226 cases of fronto-basal penetrating gunshot wounds the mortality was 25.66% (see table 4).

TABLE 3

Tangential shots which opened the dura (1,500 cases).

Intradural infection occurred in : 15%

Of those died: 12% (or 80% of those in whom infection had occurred). Most of those died from progressive purulent encephalitis, only 1% (7% of the infected ones) from meningitis.

20% of those in whom infection had occurred (or 3% of the total) survived their infection.

TABLE 4

End results in 226 cases of fronto-basal penetrating gunshot wounds of the brain.

Total mortality:		58 =	25.66 %
Survivors:		168 =	74.34 %
Discharged to duty:		128 =	56.64 %
Fit for general duty:	23 =	10.18 %	
Fit for limited service (garrison duty)	57 =	25.22 %	
Fit for laboring duty only:	48 =	21.24 %	
Discharged from the Service:	40 =	17.70 %	

56.64% could be returned to duty in the Army, 10.18% as fit for general duty, 25.22% as fit for limited duty (garrison duty), 21.24% as fit for laboring duties only. 17.70% (40 cases) had to be invalided out of the Army, for the following reasons: 16 because of posttraumatic syndrome ("Hirnleistungsschwäche"); 8 because of frontal lobe syndrome; 3 because of the fact that they had recovered from meningitis; 2 because of occasional Jacksonian attacks; 3 because of reduction of vision in one eye and loss of the other eye; 2 because of bilateral amaurosis; 5 because of the magnitude of the bone defect which was to be repaired at a later date; 1 because of severe labyrinthine damage. Not considered among these causes are 21 instances of unilateral amaurosis among these discharged cases.

Of particular interest were four series of gunshot wounds of the brain in which the ventricles and the basal cisterns had been opened by the missile and which had been treated by various combinations of surgical and of local and general sulfonamide treatment (table 5). The mortality became progressively reduced in the later series, especially since replacement of the spinal fluid by insufflated air was added to the therapeutic armamentarium. The low mortality of the later series, of 22.7% and 10.7% respectively, was in striking contrast to the results of the same types of injuries in the last war, when, according to Dr. Tönnis the mortality in cases in which the ventricle was opened by a missile was 100%, that of cases in which the ventricle was opened by bone splinters varied between 40 and 60%.

TABLE 5

Results of treatment in cases in which the ventricle and the cisterns were opened directly by the injury.

Method of treatment	No.	Deaths	Percentage
Surgical and generalized sulfonamide treatment	26	20	76.9%
Surgical care and general and local sulfonamide treatment	25	11	44 %
Surgical care, local and generalized sulfonamide treatment and early replacement of spinal fluid by insufflation of air	79	18	22.7%
Surgical care, general sulfonamide treatment and early replacement of spinal fluid by insufflation of air.	112	12	10.7%

Among a group of 929 unselected cases of gunshot wounds of the brain the mortality was 33.4%. 53.3% were discharged to duty (military duty and laboring duty), 13.3% remained in need of hospital treatment and care (table 6).

TABLE 6

Of 929 patients with gunshot wounds of the brain: died 310 33.4%

Admitted in moribund condition		28
Died from other causes		45
Of those:		
Pneumonia	29	
Generalized infection	6	
Injuries of the chest	4	
Injuries of the neck	2	
Gas infection	1	
Tetanus	1	
Embolism	1	
Injury of the spinal cord	1	
	45	73
929		310
-73		-73
856		237(27.6%)

Of those died: from meningitis (abscess & encephalitis) 191 (84.8%)
from edema of the brain 46 (15.2%)

The 619 survivors were discharged from the hospital as of 1 April 1942:
" as in need for further hospital care": 13.3%
" as fit for labor or military duty": 53.3%

The results became better as the war progressed because of perfection in methods of surgical treatment, sulfonamide treatment and other methods of prophylaxis against infection. Table 7 shows two series of otherwise comparable groups of cases. The mortality in the 1941 series was 32.14%, that in 1943 10.99%. Penicillin or penicillin like substances were never used by General Tönnis nor by any other surgeon he knew of in the German army or air force. General Tönnis added that penicillin was unknown in Germany, apart from a rumor about it which arose shortly before the end of the war.

TABLE 7

Progress of prophylaxis against infection in intradural fronto-basal penetrating gunshot wounds:

1941 (Orscha series)...	104 cases: of those died	47	
	19 due to severity of injury	19	
	1 from other causes	1	
	Of the remaining 84 cases died from meningitis	27	= 32.14%
1943 (Kuban series)...	60 cases: of those died	11	
	5 due to severity of injury	5	
	0 from other causes	0	
	Of the remaining 55 cases died from meningitis	6	= 10.99%

Dr. Tönnis continued to say that he always strove to close the dural defects in the primary operation except in cases with prolapse or with extensive tranatization and swelling of the brain, or in cases in which there was prolonged unconsciousness.

Sulfonamides were given into the brain wounds and into the wounds of the soft tissue. Prophylactic general sulfonamide treatment was given only if there was perforation of the ventricular system. In all other cases sulfonamides were held off until after meningitis was present; then it was given as therapy.

Dr. Tönnis stressed again that his own material was merely a small part of the entire neurosurgical material of the German army and

air force; that his results represented the optimum and were not representative of the whole, because he had the opportunity to do things under optimum conditions and with optimum resources because the army and air force authorities regarded his organization as a research, testing, and teaching center. Although he tried and may have contributed to bring up the remainder of neurosurgical care in the German armed forces to his own standards, he quite realized that this certainly could not have been fully accomplished. Dr. Tönnis added that as the war progressed, injuries became increasingly severe and complicated because of the relative increase in the use of mines with very small fragments.

In discussing Table 6, Dr. Tönnis added that from this table it is obvious that 27% of the patients died from the brain injury itself, and 6% from complications not connected with the brain injury. 66% survived; of the 53.3% who were discharged to labor or army service, only 27% were discharged to military duty, and most of those to limited service. Dr. Tönnis added: "that does not depend alone on the injury but also upon the patient's personality; also what the patient had been thru - his experiences, losses in his family and other factors influenced the results. In another series, we have returned 40% of the patients to the armed forces. At a re-examination three years later, 35% were still with the armed forces. In that group 5% were fit for full military duty, i.e. combat duty. A high percentage of those were regular army officers. I recall a fighter pilot who was returned to flying combat duty following convalescence from a fronto-basal gunshot wound of the brain. After he returned to duty he accounted for an additional 46 enemy aircraft. Each case has to be evaluated according to its own merits. Von Weizsäcker always wanted to issue general directives, such as 'no man who had a brain injury should return to combat' or even to any military duty. They should have all been sent to labor duty. But I have always opposed such general policies because things are different in every case. There are some soldiers, especially among officers, who would probably do very poorly if sent to anything but full military combat duty; others do well in labor assignments, but the decision will always have to be made strictly individually." When I expressed the desire at this point to see Dr. Tönnis's records, especially concerning the problem of disposition, he stated that he sent all his records on gunshot wounds of the brain to Professor Krayenbühl in Zurich, and those on the peripheral nerves to Issny in the Allgäu in western Bavaria, near Kempten. These records also include all his data on the building up of tolerance to exercise by athletics and sports, his photographs, etc.

Dr. Tönnis's work was subdivided into various departments, each one under an associate whom he selected for specific competence. The following sub-divisions were organized:

1. Brain surgery; 2: surgery of the spinal cord and peripheral nerves; 3: an internal medical department; 4: A department for treatment of the frequently associated injuries of the jaws; 5: ear, nose and throat department; 6: an after-treatment department with facilities for

neurological and psychological examinations; 7: the rehabilitation center, which included the Olympic stadium with its facilities for sports including water sports, the speech training school, other training schools and workshops .

Dr. Tönnis was then asked how he dealt with bone defects. He stated that he always excised the hard scars which remain after operations for brain abscess, that he then closed the dural defect with fascia lata, and that he closed the bone defect if it was cosmetically necessary with a plastic called "pallodon". Whenever that was not cosmetically necessary, such as for instance in small bone defects, he used bone from the tibia.

Dr. Tönnis was then asked as to his technique of nerve suture in peripheral nerve injuries (see also Appendix 5, Nos.14 & 20). He stated at first that he never used transplants, but in the next sentence he modified this statement and said that he had used them very rarely in a very few cases. His method of choice was the nerve suture. He claimed that 97% of the nerves sutured by himself and his staff regenerated, with full restitution of function in 57%. He used no tantalum sleeves. Dr.Tönnis felt that the most important things in nerve suture were intensive physiotherapeutic pre-treatment of the joints, and care in fixing the joint in a good end position. It was likewise important to let a sufficient amount of time lapse after the injury (preferably four months) in order to allow for spontaneous regeneration and in order not to disturb the latter by operative interferance if it was in progress. Dr. Tönnis stated that he had devised a special method for high repair of sciatic nerve injuries in the pelvis (see Appendix 6, No.4). In some of his operative cases, he claimed to have obtained regeneration of the sciatic nerve 10 - 12 months after the injury. Dr. Tönnis added that the peripheral nerve department, including the sub-department for neurosurgical treatment and for physiotherapeutic after-treatment, had been evacuated to Issny in April 1945. At the same time, representatives of the Swiss Red Cross visited Dr. Tönnis and took his other records to Zürich shortly before the Americans entered Bad Ischl on 6 May 1945.

The spinal cord injuries were likewise treated in this separate department of which Dr. Hans Schmidt, Oberstabsarzt, was in charge. The prognosis was always bad. The policy in acute cases was to hold off treatment until the patient had recovered from shock. Laminectomy was always done in case of block or in case of an intra-canalicular metallic foreign body. In all cases of spinal paralysis of the bladder which were treated in installations under Dr. Tönnis's direction, a supra-public bladder fistula was produced. But Dr. Tönnis stated that this was not done generally throughout the medical and surgical services of the armed forces. Tidal drainage was not used, not even in rear areas. According to Dr. Tönnis's opinion the supra-pubic fistula and the subsequent practice of manual expression of the bladder sufficed to prevent significant infection.

Dr. Tönnis does not recall the exact figure of how many closed head injuries he or his organization treated, but he thinks that one half of his clinical material consisted of closed head injuries.

In all cases convalescing from head injuries, closed or open, who showed persistence of symptoms without neurological signs, psychological studies were carried out aimed at determining the presence or absence of "Hirnleistungsschwäche" (brain performance weakness), the approximate equivalent of our non-committal term "post-traumatic syndrome". Dr. Pittrich, who also took part in supervising the rehabilitation program, carried out special psychological investigations in this condition, for which he also used the Rorschach test, the Pauli test, and other tests, especially those aimed at testing the various localizable functions of the brain, according to the principles of Kleist, by whom Dr. Pittrich had been trained. He has found in this work that in right-handed persons the left hemisphere is more likely to cause localizable losses of function. His method of testing also revealed frontal lobe syndromes, specific disturbances of parietal lobe functions and other focal disturbances in these patients. Dr. Tönnis stressed the point that the concept of Hirnleistungsschwäche was that of an organic category of disease. When I asked Dr. Tönnis whether a neurosis coexisted in some cases or whether in some cases the main presenting symptomatology may have been neurotic, Dr. Tönnis emphatically replied: "No, No." He distinguished three major types of phases of Hirnleistungsschwäche, namely: 1: latent; 2: compensated; 3: decompensated. Dr. Tönnis considers Hirnleistungsschwäche as due to "damage of the brain stem with disturbances in the realm of the vasomotor nerve apparatus." Pneumoencephalographic and electroencephalographic examinations were carried out in all cases of Hirnleistungsschwäche. There was a "statistical parallelism" between abnormal EEG and Hirnleistungsschwäche, but no positive correlation in individual cases. There was a search for such an "objective test" for Hirnleistungsschwäche, but the EEG did not turn out to be that test because many cases had normal EEGs, who nevertheless were suffering from definite Hirnleistungsschwäche. Dr. Tönnis stated that he has arrived at his conclusion regarding "Hirnleistungsschwäche" with the cooperation of a number of psychiatrists who served in his department and who had been well trained by first rate neuropsychiatrists, such as Kleist, Pötzl, Reichardt, Kehrer, Schuster (who was well known for his frontal lobe work), and Goldstein. Dr. Tönnis claimed that in contrast to the cases treated by Von Weizsäcker, none of the cases treated by his rehabilitation program have taken on superimposed neurotic trends. He felt that this was due to intensive rehabilitation treatment with effective elevation of exercise tolerance by means of competitive sports and athletics, which not only prevented neuroses, but also improved or cured many of the definitely organic disturbances associated with Hirnleistungsschwäche, including rigidity, masked facies, and decrease of spontaneity of the type seen in Parkinsonian disorders.

Dr. Tönnis was then asked about his experiences with operations for traumatic epilepsy. Dr. Tönnis stated that he operated continuously on cases of traumatic epilepsy, but did not recall exact figures. His technique for excision of epileptogenic foci is to cut right through into the ventricle and to excise not only the scar, but also the subjacent tissue between the scar and the ventricle. The final result is a cerebral defect with free flow of cerebrospinal fluid from ventricle to subarachnoid space. The rationale for this procedure was the view that contact of the cut brain surface with cerebrospinal fluid prevented gliosis. Dr. Tönnis felt that the ventricular dilatation was an early effect of traumatization of the brain and was not due to shrinkage of scars as had been assumed by Foerster and by Penfield. Dr. Tönnis stated that he made a practice of excising also non-epileptogenic scars, in order to prevent circulatory disturbances in the vicinity of the scar caused by mechanical factors. Dr. Tönnis felt strongly that "shackling" of the ever motile brain - ever motile because of its constant respiratory and pulsatory movements - to the scar, produced circulatory disturbances in the vicinity of the scar, and thus a progressive growth of the area of damage and destruction of cerebral tissue.

For the prevention of adhesions Dr. Tönnis uses a rubber membrane such as devised by Cushing, which is being inserted temporarily until new arachnoid is formed. If there is an open communication with the ventricle no such membrane is necessary.

Dr. Tönnis stated that recurrences in his series of cases operated on for traumatic epilepsy were exceedingly rare. He claimed that 87 - 88% of his cases operated on for traumatic epilepsy remained free from recurrences. Dr. Tönnis was then asked whether he ever observed bioelectric recurrences in EEG re-examinations. He replied that he recalled no such findings, but stated that his material was not completely studied yet. He stated that he has not observed the phenomenon of spread to, or "learning" of abnormal wave patterns by other parts of the brain which were not originally involved. The usual number of patients in Dr. Tönnis's neurosurgical center was 1,600 - 2,000. Of these 200-350 were usually bed patients under active neurosurgical treatment, 500 were neurological conditions including "Hirnleistungsschwäche" following closed head injuries, 300 were peripheral nerve wounds under active treatment, the remainder convalescents in various phases of the rehabilitation program. Altogether 10,500 cases went through Dr. Tönnis's center, complete records of which have been kept and are available, most of them in Zurich where they are in the hands of Dr. Krayenbühl. The total number of cases with injuries of the brain, spinal cord and peripheral nerves in the German armed forces which passed through neurosurgical hospitals in addition to Dr. Tönnis's center was about 50,000.

Of Dr. Tönnis's associates, a number of them were interviewed, some in detail. The information obtained from them is reported in the following 3 chapters.

2. Information received from Stabsarzt Dr. Erich Fischer-Brügge, Luftwaffe, surgeon and neurosurgeon, and Dr. Tönnis's closest collaborator. Dr. Fischer-Brügge stated that cases of blast were included among the closed head injuries treated at the center. Dr. Fischer-Brügge stated that a particularly high percentage of blast injury cases developed Hirnleistungsschwäche in the later course of their illness. Another observation made by Dr. Fischer-Brügge was that shell fragments following perforating injuries of the brain which come to rest within the brain substance, frequently lodge closely to larger arterioles, presumably because they were caught by the elastic arterial string. This is a point to remember when removing such splinters.

3. Information received from Stabsarzt Dr. W. Rüsken, neuropsychiatrist, and from Stabsarzt Dr. Ernst Dvoracek, the internist on Dr. Tönnis's team. Stabsarzt der Luftwaffe Dr. Wilhelm Rüsken, M.D. (Hamburg) 1932, is a neurologist and psychiatrist, trained by Professor Bonhöffer in Berlin. His main fields of activity in Dr. Tönnis's organization included psychiatric consultations, and the diagnosis and the treatment of epilepsy. Furthermore, he was in charge of the after-treatment, the rehabilitation program and the work therapy of the brain-injured.

Stabsarzt der Luftwaffe Dr. Ernst Dvoracek, M.D. (Vienna) 1937, is a specialist in internal medicine, trained in Dr. Eppinger's medical department at the University of Vienna.

Dr. Rüsken and Dr. Dvoracek were interviewed together. First Dr. Rüsken was asked about his concept of Hirnleistungsschwäche. He replied that it was a non-localizable organic cerebral disorder which was first described by Reichardt and Foerster. It consisted in the main of the combination of two syndromes:

(1) a vegetative syndrome

(2) a psychopathological syndrome consisting of difficulty in concentrating, disturbance of memory and emotional weakness.

The only effective treatment of Hirnleistungsschwäche was work therapy and therapy aimed at raising exercise tolerance by athletic activity and sports.

Hirnleistungsschwäche was more frequent and of longer duration following closed head injuries than it was following open head injuries.

Of patients treated for Hirnleistungsschwäche at Dr. Tönnis's

neurosurgical center, 2% were restored to military duty status; most of them to limited duty status, only a small percentage to full military duty status, practically only in the case of regular army officers who strongly desired such status. 5% were discharged as fit for labor in civilian life, while 15%-25% remained unfit for work. Dr. Rüsken added that like the category of concussion, the category of Hirnleistungsschwäche is a vague and ill defined one; but he believed that it was fundamentally an organic one.

Dr. Dvoracek, as the internist of the team, had been mainly interested in the vegetative symptomatology of the post-traumatic syndrome (Hirnleistungsschwäche) and he was asked to tell something about his work and ideas in this field. He stated that the disturbances of circulation which could be observed in Hirnleistungsschwäche were similar to those which we classified as neuro-circulatory asthenia, but which he ascribed in Hirnleistungsschwäche, to organic disturbances of the physiology of circulation. Dr. Dvoracek stated that he performed thorough studies of the circulation in patients suffering from Hirnleistungsschwäche "in order to narrow down the category of neurosis". His aim was "to find something tangible that would entitle us to eliminate the term 'neurosis'." The tests which Dr. Dvoracek performed in all his patients included daily repeated measurements of the blood pressure in a recumbent position, in a standing position, and while in motion, tests of the influence of exercise upon the circulation similar to the Schneider test; blood sugar and sugar tolerance tests, the latter both in response to insulin and to adrenalin; tests of temperature tolerance in the hot box; gastric function tests including free acidity, total acidity, and total amount of secretion in response to test meals and to caffein; and the usual kidney function tests. In addition, the stomach was observed by gastroscopy. Dr. Dvoracek felt that he has found all degrees of gradual transition from the normal to the organic brain-injured, neurosis occupying the intermediate ranges of abnormality. Because of this observation, Dr. Dvoracek felt that the neurotic was actually an organically abnormal person in whom we could not yet grasp the nature of the pathological change involved. Dr. Dvoracek admitted that even some of the extreme degrees of neuro-circulatory and vegetative instability observed in cases of Hirnleistungsschwäche were similar to those found in organ-neuroses, especially cardiac neurosis. Dr. Dvoracek was rather fascinated with the similarity of the neurocirculatory and vegetative changes encountered in post-traumatic syndrome (Hirnleistungsschwäche) with those of the neuro-circulatory neuroses and asthenias, but he did not draw the conclusion from it that possibly or probably neurotic mechanisms played into the mechanism of the post-traumatic syndrome, but that on the contrary organic neurocirculatory imbalance played a part in the neuroses.

Dr. Dvoracek then quoted the case of a young soldier who, following the fracture of a leg, began complaining of heart trouble. Studying his vegetative system Dr. Dvoracek found that the changes in this soldier were similar to those of his cases of Hirnleistungsschwäche. When Dr. Dvoracek was asked what treatment he employed in this soldier, he replied: "I wanted to treat him by implantation of a hypophysis, but he refused". He was discharged from the hospital to limited service as "LD 49" which meant "limited service due to heart disease". I then asked Dr. Dvoracek what he would have done if he had considered this soldier a case of neurosis. He replied that he would have then found him fit for full military duty and that he would have classified him as A 49. When I asked him why '49' (which meant heart) and not '15', which meant nerves, he replied "because it manifested itself in his heart", and he added that the organ-neurotics were not supposed to be classified under '15'. Dr. Dvoracek stated that as the war went on the cardiac neuroses played an ever increasing role, both in terms of numbers and in severity of disabilities. At the beginning of the war, there was very little cardiac neurosis, probably due to the enthusiasm of war. The number of cardiac neuroses were steadily increasing up to the end, when they reached their peak values.

Dr. Dvoracek had extensive experience on battle fronts in Russia. He stated that nervous exhaustion cases were returned home for 2 - 3 months; after three months they were re-examined and reassigned. He continued: "as physicians out at the front, we have always tried to prove the existence of an organic illness because the diagnosis of 'neurosis' was discriminating. I have never made that diagnosis. Besides, there was always something organically wrong with everybody. Everybody had either diarrhoea or some circulatory disturbance, and we have diagnosed them as such. In Russia we had a lot of dysentery without bacteriologic findings. In those cases we were rather stringent in refraining from recommending evacuation. A curious thing was that as soon as active battle was joined and shooting went on, we internal medical men had nothing to do, but as soon as the front became quiet we suddenly had a lot to do". Dr. Dvoracek estimated that 5% of the cases in evacuation hospitals at the front (Kriegslazarette) were cases of functional disorders. The remaining vast majority were organic conditions, among which cases of "field nephritis" predominated. This was an infectious type of glomerulo-nephritis which developed in some relationship to cold and dampness.

Dr. Dvoracek who was commissioned in the Luftwaffe, also had some experience in screening stations for flying personnel (Sichtungsstellen für fliegendes Personal). The condition known as "Abgeflogensein" (flying fatigue) consisted in a state of weakness, with tremors, sleeplessness, complaints referred to the inner organs, failure in keeping up levels of accomplishment, and lack of confidence in flying. Dr.

Dvoracek considered this condition as an exhaustion state which occurred in perfectly normal and "psychopathologically non-suspect" human beings. Dr. Dvoracek felt that environmental conditions and training did have a lot to do with nervous failure. He stated that in the winter of 1943 when a great number of personnel were transferred out of the Luftwaffe and put into infantry combat formations, practically all the transferred Luftwaffe personnel broke down because they did not have the experience and the training in infantry combat.

Flying fatigue was treated at mountain homes, especially ski-ing homes. Fatigued flying personnel were sent there for 4 - 6 weeks at a time.

Dr. Dvoracek stated (also Dr. Tönnis had called my attention to it) that there was a particular special type of flying fatigue which occurred during the Battle of Britain. Flying personnel which was sent on combat missions to Britain, especially those flying in single engined planes, frequently developed gastric complaints. This condition was then called "channel stomach", because some of the afflicted aviators thought that it was due to looking out of their cockpits at the waves of the channel, and that just looking at the waves underneath with nothing else visible, made them sick to the stomach. Dr. Dvoracek added "we thought this was due to the cold, irregular meals out of tin cans, because these aviators flew all the time, practically ceaselessly, on a number of missions throughout the day, and they almost always missed their regular meals." Dr. Dvoracek did not know anything about another obviously neurotic condition, which likewise Dr. Tönnis had mentioned to us, which was said to have afflicted a number of German troops fighting at Tobruk, and which had then been known as "Tobruk heart".

Dr. Rüsken then added to this discussion that in this war no cases of "typical war neuroses" or "pension neuroses" were seen, which were so typical of the last war. Dr. Rüsken felt that the major contribution to keeping down the incidence of neuroses among patients who had had a brain injury was made by the very definite policy that a man with real head injury was never sent back to combat or to the front unless he himself wanted to go there. This may have contributed to giving a feeling of security to the brain-injured patient and eliminated the incentive to evade or to "goldbrick". The program of rehabilitation in the hospitals, likewise, was kept healthy and stimulating. The program on rehabilitation wards was approximately as follows:

0800 hours: ward details.

0900 hours: medical rounds.

1000 hours: rehabilitation treatment: sports, athletics, workshops, physiotherapy and remedial exercises, and school classes.

1200 hours: Lunch.

1300 - 1430 hours: Bed rest.
1500 - 1830 hours: Rehabilitation treatment like at 1000 hours.
1900 - 2200 hours: Supper, then free time for elective activities.
Three times per week lectures were given during that period. Dr. Rüsken felt that all this activating program definitely prevented the development of neuroses in the hospital, but he stated that some patients who had been discharged without neurosis as fit for work came back later with neurosis. This, Dr. Rüsken felt, was due to poor handling on the part of outside agencies, and therefore later a policy of continued collaboration between the treatment center for the brain injured and the employing echelons was organized. A special institution for the social welfare for the brain-injured was founded, called "special military hospital organization for the social welfare of the brain-injured" (Sonderlazarett zur Betreuung der Hirnverletzten). Such social welfare centers were attached to all treatment centers for the brain injured, including the one at Berlin. Every soldier before discharge from the hospital was examined by the medical staff of this Sonderlazarett, who gave exact directives to the Veterans' Administration, about how to handle and to employ this particular patient. It has been found that originally the Veterans' Administration was not cooperative in that the general practitioners who performed the re-examinations there did sometimes declare a man well who had been discharged from the hospital for the brain-injured, although there were definite regulations against any change of evaluation of disability by the general practitioners employed by the Veterans' Administration. The law always required a specialist for any significant re-evaluation. It was observed that the feeling of insecurity produced in the brain-injured soldier by such sudden and uncalled for re-evaluations of his disability status threw some soldiers with organic Hirnleistungsschwäche into additional neurotic reactions. Dr. Rüsken had seen several such patients taking this turn $1\frac{1}{2}$ - $2\frac{1}{2}$ years after discharge from the hospital. Since then the policy was to give every man discharged from the hospital a "work-test-furlough" (Arbeitserprobungsurlaub) of 2 - 3 months duration, during which time the doctor from the special hospital center for social welfare of the brain-injured followed up and checked his performance in order to help him reach a satisfactory work adjustment.

The therapy for acute neurotic reactions consisted in mild sedation and athletic therapy. Especially the athletic and sports therapy had excellent results in organic and psychological illnesses as well. Dr. Rüsken used no abreaction therapy and no sustained narcotherapy; neither did he use insulin, except for the psychoses.

Dr. Rüsken saw several cases of blast injury who were unconscious for 1 - 3 days. Treatment of these cases consisted in prolonged bed rest of many weeks duration. Later the usual rehabilitation treatment was instituted, but Dr. Rüsken found that cases of blast injury did

not stand the systematic raising of exercise tolerance by this treatment as well as other cases. On the whole, the open head injuries did better with this treatment than the closed head injuries.

4. Information received from Stabsarzt der Luftwaffe Dr. Carl Theo Dussik, M.D. (Vienna) 1932, Neuro-psychiatrist on Dr. Tönnis's staff. Dr Dussik is a neuro-psychiatrist trained by Dr. Pötzl in Vienna. His main scientific interests were in the neuropsychiatric aspects of carbohydrate metabolism and of anoxia and hypoxia, in the diagnostic use of ultra-sound-waves, and in the problems of the post-traumatic syndrome (Hirnleistungsschwäche).

Dr. Dussik served in an examination center for flying personnel from 1940-1942, where he was mainly engaged in neuropsychiatric selection. He stated that 20% of the applicants for flying status were rejected for psychoneurosis or psychopathy, another 10% for physical reasons. The interview on which neuropsychiatric selection was based was held in the form of an informal conversation The first point to be considered was "why do you want to fly", then came the life history. It was sometimes useful to let the applicant write out his own course of life or another thesis on a subject of interest to him, before the interview. At the beginning of the war there had been psychological tests also, but they were given up. Dr. Dussik felt that an additional significant amount of selection was performed by the flight surgeon and the company commander during elementary flying training. Dr. Dussik stated that the aim was to obtain "people who had aptitude in the practical aspects of life and who were of decent character". These qualities were worth more in flying than great giftedness. On the other hand, there was a policy not to reject too many. People who came with a sincere will were accepted in spite of physical, emotional, or intellectual shortcomings. The qualities of reliability and comradeliness, and a manly, courageous attitude in the performance of sports, were important positive assets.

There was no operational limit in the German air force. The result of this fact was that "a certain neurasthenic development occurred in all flyers". The institution of rest homes tended to control this trend sufficiently. Flyers in whom these neurasthenic symptoms were not taken care of by rest home treatment were sent to screening centers for flying personnel, such as the one in Frankfurt on Main, which was headed by Col. Von Dieringshofen. Dr. Dussik expressed the opinion that flying fatigue (Abgeflogensein) was partly an organic condition, which may have been due - at least in part - to the organic effects of vibration and acceleration of aircraft. He admitted that in a part of this group of cases this condition may have been entirely psychogenic, but he insisted that in another significant group of these cases, this condition must have been due to "not well definable organic fundamentals". He cited the case of a flyer who had hypoglycemic attacks which occurred only in flying and which were associated with dizziness, sweating and hemianopic restriction of the visual field. These attacks first developed after this flyer had an attack of hepatitis, presumably of the epidemic type, and they were possibly hypoglycemic. They only occurred when he was flying and

usually after he had been 20 minutes in the air, independent of the altitude, that is it occurred at 12,000 feet as well as at lower altitudes. But the important point was that the hypoglycemic attack always came on after 20 minutes of flying. When this patient was tested pharmacologically, he was found to be more sensitive to insulin and to adrenalin than most normal human beings. Dr. Dussik felt that this constituted proof of an organic disturbance of vegetative regulation of slight degree. He felt that such slight regulative disturbances may have played a role in many cases of flying fatigue, (abgeflogensein), although in most cases their existence could only be surmised clinically. Dr. Dussik continued: "maybe some day we may be able to express in organic terms what most people now consider psychological".

Dr. Dussik stated that all aviators who survived a long series of combat missions developed some degree of neurasthenic weakness and irritability, but not necessarily to the point of "abgeflogen-sein." The incidence of disability from abgeflogensein was unknown to Dr. Dussik. He stated that neurotic reactions in aviators increased greatly at the Western front when the air superiority shifted to the Allies, while neurotic complaints did not increase significantly among aviators at the Eastern front, where up to the final defeat on the ground a certain measure of air superiority remained in the hands of the German airforce. Dr. Dussik admitted that this observation implied that there was a psychological factor in these conditions. But again he felt that organic factors incidental to an unfavorable combat situation, such as loss of sleep, lack of food and loss of weight, were equally or more important. The best treatment was always the rest home, not the flier's own home because of the adverse influence of home environment upon combat personnel. During the first week of rest-home treatment, mild sedatives were given. After 3 - 6 months in a rest-home, fliers with persistent fatigue states or neuroses were used for a while as instructors, but in view of the reduction of air force training not many assignments as instructor were available. After a time spent on this or other non-combat duties, e.g. ground duties, the patients were re-examined at the nearest screening station for flying personnel. Dr. Dussik was asked how many patients were then returned to combat flying. He answered, with a smile, "that number was not very great". Dr. Dussik felt that that was mainly due to the fact that the time of recuperation was too short. He felt that after a period of recuperation lasting 1 - 2 years, such fliers would have become fit to fly in combat again.

Dr. Dussik stated that the neuroses in infantry personnel had greatly increased toward the end of the war.

At one time, in a 200-bed hospital, Dr. Dussik was in charge of a neuropsychiatric section with 30 beds, 10 of which were always occupied by patients suffering from various neuroses. The latter included people who had psychopathic traits and who reacted with

neuroses to environmental change. The other 20 beds were occupied by neuritides and other organic nervous illnesses.

In regard to the general policies of the handling of neurosis by the air force and the army, Dr. Dussik stated "one has always tried to decree the neuroses out of existence and not to take notice of them in soldiers, but in spite of that one could not keep these people with the troops - not for their own sake - but for the sake of the others in their environment". There were cases of malingering of a clumsy kind, usually during examination by the ear or eye specialist. Such attempts were easily recognized. The culprits were not court-martialled but dealt with by educational measures on the part of the physicians in charge.

Dr. Dussik stated that he found that multiple sclerosis was relatively frequent in the German army at home, as well as at the front. If it occurred at the front it was considered as incurred in line of duty. A special survey concerning the incidence of multiple sclerosis in the German armed forces during the year 1944 was made in Luftgau 17. It was found that among 6,000 soldiers who were discharged during that year for medical reasons, 490, or 8%, were discharged for reasons of nervous or mental illnesses, which included also the gun-shot wounds and other injuries of the brain, spinal cord and peripheral nerves. Among these 490 cases who were thus discharged for reasons of nervous and mental disability, 19, or 3.88%, were discharged because of multiple sclerosis. The percentual representation of multiple sclerosis among discharges of troops for medical reasons in this area was therefore 0.32%. In 14 of these 19 cases, the first symptoms of multiple sclerosis had occurred during military service; in two cases the condition had existed before, and in the other three cases no definite decision was made. Those patients who died during their military service were not included in this survey. The medical officer in charge of conscription and discharge in that area, Oberstabsarzt Zehetbauer, had stated on several occasions that the incidence of multiple sclerosis had increased during the war, while that of mental disease had decreased. It appeared that multiple sclerosis was generally far more frequent in the German armies, including those at the fighting fronts, than in our own armies, where it was practically non-existent overseas. In 1½ years of overseas service, as Chief of the neuropsychiatric section of a general hospital, I have seen only one case of multiple sclerosis. This patient had a previous attack 7 years ago while living at his home in one of the north-eastern states of the Union. There was another case of acute encephalomyelo-radiculitis of unclear etiology, but I saw no other cases of multiple sclerosis or of related conditions which could have readily been confused with it. In the British army and air force on the other hand, multiple sclerosis did occur. This brings to my mind a tentative explanation which was once suggested to me by Lt.Col. Persons. He felt that the fact that multiple sclerosis occurred among British troops camped in our vicinity, while it was absent among our own troops, may have had some relationship to the fact that all the milk ingested by American soldiers was canned milk, while the British troops had

a supply of fresh milk. According to Dr. Dussik, all food consumed by the German army and air force was fresh food, including the milk. He stated that multiple sclerosis was the most frequent single neurological disease causing discharge from the German armed forces.

Dr. Dussik had made some observations on muscular and joint rheumatism without X-ray changes in military personnel, but he had no definite opinion as to the nature of these conditions.

Other associates of Dr. Tönnis's included Stabsarzt Dr. Krücke, in charge of neuropathology, Stabsarzt Dr. Sorgo, neurosurgeon, Stabsarzt Dr. Frankenstein, who was in charge of the archives of the research section, and Oberstarzt Dr. Lohrentz, who was in charge of medical administration.

5. Information received from Stabsarzt der Luftwaffe Dr. Fritz Linder, formerly a staff member of the Neurosurgical Center in Vienna, Austria, at present attached to the Surgical Department of the University of Heidelberg.

Dr. Linder was interviewed in Heidelberg on 18 June 1945. In 1943 and 1944 he was attached to Oberstabsarzt Prinz Auersperg's section of the Neurosurgical Department of the Luftwaffe Hospital in Vienna. Dr. Linder himself was in charge of the treatment section for convalescents from brain injuries, which consisted of 300-400 beds; in view of the long periods of treatment, Dr. Linder saw about 800 patients through their complete course of treatment, including rehabilitation treatment. 90% of his patients were convalescing from open injuries, 10% from closed injuries of the brain. Dr. Linder did some research on "vegetative" hemiplegias due to cortical lesions. He observed "neurotization" in a certain portion of his cases. This occurred in simple people who sought social security and social ascent by means of their injury. Most of those were unskilled laborers in civilian life, who were eager to rise into positions of permanent employment by the Government postal service or the Government Railway Service. The average time of hospitalization at the treatment center was one year. The system of therapy by means of sports and athletic activity was helpful. The patients, after discharge, were placed in industries under continued medical supervision by special medical staff from the treatment center. The preferred final disposition was re-integration into their previous home environment.

E. General Conclusions

There was no neuropsychiatric selections in the German army and air force, except for flying personnel.

There was no discharge from the German army or air force for neuropsychiatric reasons, except to a state hospital for the insane in the case of neurotics, and to a concentration camp in the case of psychopaths. However, the psychosomatic illnesses and the organ neuroses such as gastric and cardiac neuroses were not included in the diagnostic

category of neurosis, because of a generally prevalent strong bias in favor of organic diagnoses which allowed patients with neurosis showing vegetative symptoms to be included in the neuro-psychiatric category only if they also exhibited obvious symptoms of emotional disturbance. The organ neuroses and the psychosomatic states who did not show overt signs of emotional disturbance were exclusively handled by internists on general medical wards or on special heart or stomach wards. From there they were discharged to limited service, frequently in special formations, such as the stomach battalions. Only a few of the most severe cases of heart neurosis or of neurocirculatory asthenia were discharged, under the general diagnostic category of heart disease.

There was one other exception to the army policy of not discharging neurotics, likewise facilitated by the prevailing organic bias, namely in those cases in which neurosis was superimposed upon a wound or an injury. Then the organic aspects of the wound or injury could be stressed to the point of being considered the grounds for a discharge, such as is exemplified in one of the cases reported by Panse, which is cited in Chapter 1 of this report. When this man's neurotic symptoms, however, increased subsequent to his discharge, thereby making it obvious that the neurosis had been the main cause of his disability, he was reinducted into the army, treated with repressive electrotherapy, and assigned to limited duty.

The strong organic bias is likewise responsible for the rather evasive and confused way in which the problem of "flying fatigue" ("Abgeflogensein") was handled in the German air force. The problem was handled mainly by means of long leaves in rest homes in rural surroundings, with facilities for outdoor sports such as hunting and fishing. These leaves were prolonged whenever necessary, frequently up to six months. If improvement did not supervene then, the men were simply grounded and ground jobs for such men seemed to have been plentiful. This rather evasive handling of the problem seemed to have been due to the above mentioned under-current or organic bias. While some of the ranking experts appeared to have been quite aware that the condition of "abgeflogensein" was essentially a form of neurasthenia or of anxiety neurosis, this view was by no means generally accepted or officially disseminated because some of the younger men held the view that organic mechanisms such as "the effects of vibration and of acceleration of aircraft" played a fundamental part in the causation of this syndrome. Furthermore, the over-emphasis of minor findings in the electroencephalograms of such fatigued aviators, which had been reported on in a previous report ("Neuropathology and Neurophysiology, including electroencephalography in war-time Germany"), seemed to have given additional support to the undercurrent of feeling that the fatigue states in aviators were fundamentally and essentially organic conditions, and facilitated the grounding of fatigued flying personnel on a fancied organic diagnosis. The assumption that a neurotic reaction

was essentially something disgraceful may have added temptation to that shift of emphasis upon an assumed organic background of those neurotic reactions which occurred in combat men with previously good personality and record. The feeling was quite general that one could not label a man as neurotic who came to the hospital or to the screening station with a chest covered with ribbons for bravery. This point of view appears to have motivated even experienced psychiatrists, such as Kurt Schneider for instance, who felt that nervous symptoms in a man who had lost weight during strenuous combat activity could not possibly be anything psychic, but were of course merely secondary reactions to the physical exhaustion expressed in the weight loss, and hence were a symptomatic reaction to a physical disease which placed the entire syndrome in the field of physical illness, which was not the proper domain of the neuropsychiatrist. The possibility that both, the nervous reactions and the weight less, could be coordinated responses to emotional stress was entirely rejected by him. However, it must be said to his credit that the main motivation of this policy was a desire for fairness in administrative disposal and in Veterans' Administration policies which would not have been feasible under existing German regulations had a diagnosis of a neuropsychiatric disorder been made.

It is quite obvious, however, that this organic bias which in part may have been motivated by the prevailing moral bias against neurosis was definitely a hindrance in the proper treatment of these neuro-psychiatric conditions. The treatment of the neuroses with only vegetative or circulatory overt symptoms was entirely in the hands of internists. While some informed and inspired medical men, like Dr. Siebeck in Heidelberg, did a splendid job of psychotherapy sometimes with the aid of trained lay-psychotherapists who were available from Professor Göring's institute in Berlin, the vast bulk of these cases handled by less well-informed and less inspired men were given merely palliative medicinal treatment and then assigned to limited service. In the army, neuropsychiatrists treated the gross hysterias by repressive-suggestive measures, namely by Panse's "electro-suggestive therapy" with strong and painful galvanic currents. Then after being freed of their conversion symptoms, the hysterics were likewise used in limited service assignments. In the army, the other neuroses with obvious emotional disturbances were treated by rest and mild sedatives and stimulants, and then were likewise assigned to limited service whenever possible; if they could not be used at all, they were sent to military sections of state hospitals for the insane. In the air force, on the other hand, psychotherapeutic aid was available for these conditions and electro-suggestive treatment was not used. Psychotherapy in the air force was in the hands of a small group of Professor Göring's associates, and of a larger group of lay-therapists who had been trained at Professor Göring's institute. While these psychotherapists in the Luftwaffe included well trained men such as Professor Immo Von Hattingberg, they also included some empiricists, such as Professor Gustav E. Störring, who used a rather bold and primitive brand of psychotherapy, such as exemplified in the account

given by him during our interview reported in the body of this paper. Still, in the air force psychotherapy was practiced and an effort at psychotherapeutic rehabilitation, as well as prophylaxis was made.

The organic bias also expressed itself strongly in the evaluation of the post-traumatic syndromes, especially the post-concussional and post-contusional states which were all considered due to an essentially organic condition, entitled "Hirnleistungsschwäche" (brain performance weakness). In spite of the fact, however, that this condition was not understood properly in its entirety, the treatment of the particular condition, such as practiced at Dr. Tönnis's neurosurgical rehabilitation center in Berlin-Reinickendorf, which included the former Olympic Stadium, was nevertheless effective and of high quality. The intensive rehabilitation treatment with raising of exercise tolerance by sports and athletics is to be classed as a superior form of rehabilitation treatment, which could not have been done better had the underlying condition been more thoroughly understood. In other words, in spite of the exclusive organic bias in this condition, German neuropsychiatrists and neurosurgeons found empirically the right form of treatment, and organized it well.

Another limitation of German neuropsychiatric thought which prevented proper understanding and control of flying stress, was the constitutional bias. German air force neuropsychiatrists were puzzled by the fact that the incidence of "flying fatigue" and other neurotic states was disproportionately high among fighter pilots, as compared to the low incidence of these conditions among bomber pilots, and other bombardment crew members. This discrepancy was explained entirely on the basis of an assumed constitutional difference in the personality of people who became fighter pilots as compared with those who became bomber pilots. This view was held not only by Dr. Luxenburger, the Chief Neuropsychiatric Consultant, but also by others, including Dr. Störring and even Professor Strughold (the statements of the latter were embodied in a previous report, entitled: "Neuropathology and Neurophysiology, including electro-encephalography in war-time Germany"), and this view was also expressed in a special book on the personality of the fighter pilot by Skawran (entitled "Die Psychologie des Jagdfliegers") which was later supressed, not because the explanation presented was disagreed with, but because it was feared that this book would exert an adverse influence upon the morale of fighter personnel. It is interesting in this connection to compare the German experience with our own. In the Eighth U.S. Air Force there was likewise a marked difference in the incidence of neuroses in fighter pilots as compared with bomber pilots and other bombardment crew members, but the difference was the other way around. In our air force neuroses were far more frequent in bomber personnel than in fighter personnel. We understood the meaning of this difference, namely as due to difference in combat stress, and we took the right measures, namely by arranging for for operational limits graded according to the prevailing operational stress. It was felt by those of

us who took care of neuropsychiatric problems of the 8th Air Force that the particular reason why bombardment personnel was afflicted more heavily with neuroses than fighter personnel was due not only to the greater amount of the stress, but to a special peculiarity of the stress which placed the bomber personnel in a position comparable to Pavlov's conditioning box. At the usual time of greatest stress from flak and fighter attacks, namely on the way from the I.P. to the target, the bomber pilot was not free to manoeuver and to take evasive action such as would have suggested itself from a purely tactical point of view, because this would have interfered with the aim of the bombing pattern of the formation. Therefore, he had to take the stress without the freedom of manoeuvering in meeting it. He had to keep on flying along a pre-arranged straight course, undeflected by heavy flak or fighter attacks without freedom to manoeuver according to his tactical judgment. The American fighter pilot on the other hand, when he went into combat, was free to manoeuver, to attack and to evade his opponents as he saw it tactically necessary. In the German air force the position was entirely the reverse. The bomber attacked singly and at night, and not only was flak less accurate and devastating in dealing with single, fast and low-flying planes at night than it was in dealing with our dense formations flying in daylight, but most important of all, the German bomber pilot had full freedom to manoeuver and to take evasive action as he saw tactically fit. This is exactly the freedom which our bombers lacked at the height of the attack against them. The German fighter, however, enjoyed no such freedom. He was in the psychological position of our bomber. He had to rise straight up at the arrival of our formations and attack them head-on, if necessary ram them, without deflection of his course by tactical manoeuvers or evasive action whenever he met superior fire power. He had to keep up a straight line of attack, undeflected by individual tactical combat considerations, exactly as our bombers had to do. Furthermore, attacking in daylight, he saw the losses of comrades which his outfit incurred, as did our daylight bombers, while the German night bombers were less aware of each other's losses. The losses of our fighters in individual actions were usually less than the enemy's due to their superior tactical skill. It is therefore quite obvious that the main combat impact occurred between our bombers and the German fighters, and it is revealing indeed as to the nature of neurosis-producing stress, that the neuroses in our air force predominated in bomber personnel, while the neuroses in the German air force predominated in their fighter personnel. It is furthermore important to realize that the psychological conditions of Pavlov's 'conditioning box' were inherent in our bomber tactics and in the German fighter tactics, due to the exclusion of freedom to manoeuver, to meet stress according to tactical judgment, or to depart by deflecting evasive action from the pre-arranged course of attack. This fact supports the view that mechanisms of conditioning by threatening experiences in Pavlov's sense are operative in the development of combat neurosis. That differences in resiliency to stress exist among different people goes without saying, and Pavlov himself was by no means blind to that fact. The Germans, however, overlooked the Pavlovian stress factor completely and ascribed everything to assumed pre-existing personality factors.

To ascribe such personality factors, however, to an entire group of people such as fighter pilots as a group, is indeed the reductio ad absurdum of this fundamental German constitutional concept.

In the handling of the problem of psychopathic personalities, however, the Germans were on relatively safe ground in their constitutional philosophy. Their policy was to create an environment in which the constitutional psychopath could function. They conceived this environment as one in which the defective social integration of the constitutional psychopath would be forcibly strengthened from the outside by a system of discipline more rigid and compelling than that in which the normal soldier functions best. They therefore instituted special training battalions, as well as special field battalions for psychopaths. There is no doubt that thus they succeeded in utilizing a good many individuals, the counterparts of which we dismissed from our army under AR 615-360, Section VIII. In these battalions they gave these various chronic disciplinary offenders, criminals and homosexuals, the opportunity to "redeem themselves before the enemy". They were usually given arduous and dangerous chores to do which did not require too much individual initiative, but which were associated with high casualty rates, such as the removal of mine fields. There is no doubt that this aspect of German military policy was handled well and effectively, and that the training and utilization respectively of psychopaths in such special formations was preferable to our early policy of Section VIII discharge. Similarly, we had later ourselves established a special training formation for psychopaths in the ETO, namely the "SOS Recovery Center", which worked well and successfully, but which, compared with the German set-up, handled this problem on a very small scale. There is no doubt that this particular aspect of German military policy is worth further investigation. Some of its main principles, especially the educational ones, could be very well included into the educational activities which a democratic army of a democratic nation owes to those of its problem citizens who by virtue of psychopathic deviation are not able to benefit from the ordinary teaching methods of military discipline in time of war.

The special formations for neurotics and other partly disabled personnel such as utilized in the stomach battalions, the ear battalions, the special flak battalions for neurotics, and others, are far less deserving of consideration by other nations, unless very hard pressed for any form of manpower, even disabled manpower, such as was included in those battalions. Furthermore, there can be no doubt that the utilization of this manpower without any but the most superficial patch-up treatment could by no means be described as economic or desirable from a public health point of view.

As stated above, the repressive electro-suggestive treatment was given only to those patients manifesting gross hysteric states. Other forms of treatment, such as by abreaction, sustained narcotherapy or insulin sub-shock, were practically unknown. None of the authorities

interviewed knew anything about them, although the reports quoted in the first chapter of this paper reveal that Professor Göring had recommended an 8-day course of narcotherapy in one patient, which, however, in that case did not result in a therapeutic success. Insulin shock treatment (not Sargant's subshock treatment) was given to one series of neurotics by Bürger-Prinz. Psychotics were treated with the usual shock methods. In the air force, psychotherapy by a few of Professor Göring's associates and teams of lay-psychotherapists was available.

Of particular interest was the statement by Dr. Hochapfel that the S.S. did not utilize psychopathic personalities for the jobs of bullies and killers employed in concentration camps, but that on the contrary, the S.S. had found them undesirable in such positions. They preferred to select normal, stable and stolid people of the conforming, authority-respecting type for such jobs, whom they then "brutalized" by a special course of indoctrination. Dr. Hochapfel further stated that of course psychopaths occasionally drifted into such positions, but that they were soon found unable to conform and to keep out of conflict with their environment, even in this primitive social setting of hired and trained bullies and killers, and that they therefore had to be soon eliminated from such positions. Elimination from such positions, of course, was always by execution. Dr. Hochapfel could not tell me how the army-discarded psychopaths who had been unable to adjust even in special or punishment battalions, were faring in concentration camps, and I made a point to find out on some of my visits to these camps what had happened to them. In the first camp which I visited only three weeks after its liberation by American armies, namely the concentration camp in Ebensee, near Bad Ischl in Austria, there were no such army-discarded psychopaths. The inmates of this camp, at the time of my visit consisted almost entirely of unfortunates who had been taken there for racial or religious reasons, including a large proportion of young adolescents. Even purely political prisoners were rare. I shall always remember this horror camp, and the stench of the indignities inflicted on innocent human beings by the Germans will probably never leave my nostrils. In Dachau, which I visited later, there was a greater proportion of political prisoners, but I found only one army-discarded psychopath there. I obtained a fairly complete story about another one from ex-prisoners, namely from Mr. John Rauduin, Chairman of the "Investigation Committee for Medical S.S. Crimes", Dr. Paul Hussarek, at present Chief of the Dachau press-office, and Mr. Oscar Häusermann. The man they told me about was a certain Galbavy, who had proved unadaptable in the army because of repeated instances of aggressive violence, drunkenness and AWOL. After his arrival in Dachau he was made into a "Capo", which is the barracks chief of a block. He immediately became the terror of the people under his sway. He began beating and killing people unchecked but applauded by the S.S. guards, who enjoyed witnessing such activities. He himself bragged that he had strangled 600 Jews to death with his own hands. The S.S. personnel

on the whole preferred watching such acts of brutality by specially selected prisoners to committing the atrocities themselves. Galbavy utilized the terror inflicted by his brutalities to extort things from the other prisoners, especially their butter rations. It was his custom, after their meagre butter rations had been passed out to the prisoners, to order them to turn them over to him, callously stating that he and some other "Capos" needed the butter in order to roast their potatoes. Those who did not immediately turn over the butter with a polite: "Yes, Herr Capo", were brutally beaten or strangled by him on the spot. Finally, however, Galbavy's excessive desire for attention and recognition on the part of the S.S. made him obnoxious even to them, and so one day they selected him to serve as a human guinea pig for a particular set of experiments which consisted in the surgical removal of the entire omentum. Mr. Bauduin was not quite sure whether a large scale experiment of this sort was performed with subsequent studies of gastro-intestinal function, or whether it was merely an excuse to torture Galbavy or to play a practical joke on him, S.S. fashion. At any rate, Galbavy's omentum was removed in toto and in one piece. I saw it in a jar in the pathological museum at Dachau, which had been collected there by S.S. doctors. This museum also includes a good deal of material on phlegmons of the legs which was known as "The Dachau disease". Shortly after this so-called experiment Galbavy was killed by the S.S.

The other army-discarded psychopath whose name became known to me was examined by me on 21 June 1945, at the American military prison in Dachau. He was Rudolf Zimmermann, originally a member of the Waffen S.S. In the Waffen S.S. he had committed numerous breaches of discipline, including AWOL, and he finally deserted in 1942. He rationalized his final desertion with the statement that he had become an anthroposopher. After attempts at disciplinary re-education, he was sent to the Dachau concentration camp as an inmate. On arrival at the camp he became the fair-haired child of the S.S., probably because of his engaging good looks, which indeed are those of "Hitler's dream picture of a Nordic youth." His good looks are enhanced by the typical engaging personality of the unstable psychopath who often succeeds so well in making favorable first impressions. The S.S. gave him a job as camp policeman, but in this position he soon was found unreliable in terms of not appearing for duty when required, lying about the rounds he had made, and other irregularities. It must be said to his credit, however, that he did not abuse his position by being brutal to his less fortunate fellow prisoners. The redeeming feature about this kind of unstable psychopath which Zimmermann represents is the fact that because of their resentment against authority, probably conditioned by early childhood experiences, their sympathies on the whole are with the oppressed and not with those in charge and in a position of authority. By reason of the above mentioned disciplinary irregularities he was taken to the S.S. stronghouse of the prison in Dachau, called

the "Bunker". The liberating American army found him there and because of his good record in the treatment of his fellow prisoners while he was prison policeman, he was not only liberated but specially trusted by the liberating American authorities. Again he is understood to have made an exceedingly favorable first impression. At his request he was entrusted with the job of rounding up S.S. hiding in nearby parts and of retrieving the motor cars which the S.S. had taken with them, and which were needed to help with the transportation problem in bringing food to Dachau. In this capacity he did help in rounding up S.S. and he did round up cars, but while he turned in some he withheld others and sold them on the black market. It is quite obvious that his resentment of authority and egocentric self-interest brought him into conflict with the liberating force as definitely as he had been in conflict with the S.S., and when his embezzlement of motor cars became known, the Americans had to take him back to the same stronghouse from where they had liberated him originally, but which was now under different management. When I examined Zimmermann, I found him to be the typical unstable psychopathic personality with strong resentment of all authority, but with great capacity for engaging charm when he wished to make a good impression. When he was first brought to me he assumed a haughty air, obviously in order to impress me with the fact that he considered himself wronged, but when he learned that my main purpose was to question him about entirely different matters, and that I was not concerned with the legal status of his case, he changed his attitude entirely, became friendly and amiable and gave me freely and helpfully all information desired. He was obviously eager to make a very favorable impression on me, tried to show me what an astute observer and intelligent, helpful and useful individual he was, obviously in order to gain favors from me in return. He had the typical vivacious charm of the psychopath, and the same tendency to take liberties with the truth whenever he felt that it suited him. There is no doubt that this man is entirely unadjustable in any social setting, unless he could be helped to mature, which may assist him in achieving reintegration.

I found no other army-discarded psychopaths, nor could I obtain significant histories of an additional number, because many of them after fairly brief stays in the concentration camp, were sent back to the fighting services in one capacity or another. However, this problem should by no means be regarded as settled and further search and study may reveal more material on this subject.

There is no reason to believe that the incidence of neurosis in the German armed forces was less than in ours, especially if one includes the very numerous organ neuroses and psychosomatic illnesses; but neurosis did not figure as a cause of discharge from the German armed forces because of their policy in hanging on to their neurotically disabled personnel for whatever residual services they could get out of them. There is indeed reason to assume that the organ neuroses and

psychosomatic illnesses were more numerous in the German Army than in ours, although also in our armed forces there was a general shift of neurotic symtomatology in that direction during this war.

The organ neuroses and psychosomatic illnesses, under whatever organic pseudonym they went in the German Army, likewise did not figure in significant numbers among the discharged, for they were usually retained on limited service status. It seems that there were innumerable limited service jobs available in the zone of the interior in Germany, especially among prison guards and in industrial assignments. My colleague Major George E. Smyth, Royal Army Medical Corps, an experienced Neurologist trained at Queen's Square National Hospital in London, who spent four years in a prisoner of war camp in Germany, told me that practically all the guards he ever came in contact with were confirmed neurotics, who sooner or later would always consult him about their various complaints which they attributed, and which frequently were officially attributed, to "Magengeschwür" of "Herzentzündung". Also officers in these prisoner of war camps were odd characters who used to act as if they believed that spectacular loudness in the pitch of their voices, with which they constantly reprimanded their subordinates, constituted their only chance for promotion.

Constitutional psychopaths were likewise by no means less frequent in Germany than in our own country, and there is a great deal of reason to assume that some types of psychopaths, especially the homosexuals, were far more frequent in Germany than in our country. The Gestapo, as reported in the body of this paper, estimated the number of active homosexuals among the mature male population in Germany as 4,000,000, the "Schwarzes Corps" (the S.S. news magazine) as 2,000,000. This would mean that 10 - 20% of the sexually mature male population in Germany were homosexuals. (Comparable estimates of homosexuality among the sexually mature male population of England and of the United States indicate an incidence of 5%.) Nevertheless, homosexuality was always considered a legal problem in the German Army. Homosexuals as well as other psychopaths were likewise never discharged from the Service, except to prisons in the case of homosexuals and perpetrators of all kinds of crimes punishable by long prison terms, or to concentration camps in the case of other unadjustable disciplinary problems due to psychopathy. All those who were considered remediable, disciplinary offenders, criminals and homosexuals included, as well as those homosexuals and other criminals who were found irresponsible or of reduced responsibility by medical experts for reasons other than psychosis or mental deficiency, were placed on probation in the special field battalions (punishment battalions) and given a chance to "redeem themselves before the enemy".

In the neuroses, the shift in symptom choice toward the inner organs which was recognized early in this war by Störring and others, was of particular interest and its possible causes were discussed with

a number of German observers. Professor R. Siebeck and Dr. E. Beck, who seem to have given a great deal of thought to this problem, felt that the social attitude was of greatest importance in causing this shift in symptomatology, in that it brought about the condition that trembling or other overt manifestations of emotional upheaval were no longer regarded as a cause of disability, but that gastric and cardio-vascular disturbances still were:

I quite agree that the social attitude in regard to "what constitutes disabling illness" is an important factor in the symptom choice and the symbolic expression of disability on the part of the neurotically disabled patient. The neurotic generally expresses his disability in such terms as are accepted in his social community as constituting disabling illness. I made this observation for the first time when I removed the location of my neuropsychiatric activity from Boston, Massachusetts, to Durham, North Carolina, in 1941. During my 8 years in Boston I had found gross hysterical conversion symptoms extremely rare; but when I came to North Carolina, I was suddenly confronted with a vast number of hysterical monoplegias and astasia-abasia syndromes in young girls who had some emotional problems, as well as in tired housewives. After seeing six such cases in one afternoon in my private consulting practice, and in the public clinic, I almost felt as if I had been catapulted back in time into the early days of Charcot at the Saltpètrière. It sooned dawned upon me, however, what that situation meant. In Boston and surrounding New England, possibly because of the effects of urbanization, headaches and states of emotional tension and anxiety were accepted as causes of disability, both in work contacts as well as in the family setting. In the rural setting of North Carolina, however, nothing short of an actual paralysis of a limb or complete inability to stand or walk, was accepted as a significant disability which would interfere with farm work or the performance of household chores, and call for the help of a physician. In this rural setting, the symptom choice for the purpose of symbolic expression of emotionally conditioned disability fell invariably upon the limbs.

Other observers too had noted that social approval or disapproval may determine fashions of symptom choice. An anthropologist, whose name has escaped my mind for the moment, told once in a lecture at Duke Hospital, that among a certain group of natives in Madagascar violent hysterical fits which the natives called "trumpa", had become rather fashionable among the younger and less privileged children of large families, obviously as a means of expressing emotional reaction to frustration and in order to receive attention. A rather elaborate system of exorcism which entailed a good deal of expense because of the hiring of native witch doctors and the wining and dining of friends and relatives incidental to the ceremony, regularly succeeded in curing the symptoms. However, when this "trumpa" became increasingly fashionable, some bright light among the natives had the smart idea of saving expense by omitting the exorcism and instead tying the excited and convulsing victim up in ropes and shipping

him to the nearest French hospital at the coast, where treatment was far less colorful and fanciful than in the native village. It was found that this inexpensive method cured the "trumpa" just as well as the previous expensive exorcism, and had the additional effect of shifting the expression of emotional upheaval completely away from the symptomatology of spectacular hysteric fits. The anthropologist did not state if the anxiety states or the organ-neuroses and psychosomatic illnesses increased instead, but there is no doubt that these mechanisms play a strong role in symptom choice.

Dr. Siebeck, and, more so, Dr. Eduard Beck, considered an additional factor, namely the suggestive influence of fairly normal and commonplace reactions, in motivating symptom choice for neurotics in terms of supplying cues. The cue in the last war, and which led to the marked tremor states of neurotics of that war, was the fact that briefer or longer episodes of trembling were quite commonplace when tense, though not necessarily frightened men, huddled together in chilly wet trenches during an artillery barrage. In the present war, this cue was provided by the incidental gastric disturbances, which are a quite common occurrence during the active days of a war of movement because of the irregularity of poorly prepared and hastily consumed meals. While the normal person pays little attention to these incidental episodes and soon forgets them, in the neurotic they serve as the cues for neurotic fixation to the particular organ system involved. Similar "cues" are provided by the normal sensations of strained activity of the heart in excessive fatigue, during forced marches or after exhausting crawling and running during attacks under enemy fire.

As stated above, even the organ-neuroses which were very frequent in Germany, probably more frequent than in our army, did not figure significantly among the numbers of those discharged for medical reasons from the army. In that respect, it is important to realize that whatever the goals of the neurotic in the German army were, desire for discharge did not figure as an important one. The desired goal was rather a limited service assignment within the army in the zone of the interior, or, better still, an assignment on laboring duty in an industrial organization in the zone of the interior in Germany, while still wearing army uniform. The reason for that was that to the average German soldier who was not a Nazi party member the fact that he belonged to the army provided a certain amount of protection from the indignities and dangers which threatened the average non-party-member civilian at the hands of the S.S. and other Nazi organizations. Furthermore, the position of soldier gave him other special privileges and considerations which the civilian lacked. Therefore, the average German found it desirable to remain a member of the armed forces in preference to discharge. This indicates, that if civilian life is made into a sufficiently abhorrent proposition replete with obvious threats and hidden dangers, it ceases to be a goal aimed at by the neurotic; but this circumstance by no means prevents or cures neurosis. Things were different in the case of members of the Nazi party. Large

numbers of Nazi party members of substance and consequence did manage to stay out of the armed forces on various so-called "essential" civilian assignments, especially in industries and in various political and administrative positions.

With the exception of the rehabilitation program for the brain-injured, it was the policy of the German army on the whole not so much to readapt the disabled soldier to the service, but to create within the service conditions designed to allow his utmost utilization.

As to the strictly neurosurgical treatment in the German armed forces, it was probably as good as neurosurgery could be without penicillin, and without the use of tantalum foil and tantalum plates; and without some of the refinements of surgical subtlety in handling brain tissue, which are more indigenous to American and British neurosurgery than to German neurosurgery.

Of all the methods and procedures observed, I found only two which appear worthy of further scrutiny and consideration, with a possible view toward adapting them for our own use. These two procedures are:

(1) The intensive rehabilitation program such as was offered at the treatment center for the brain-injured in Berlin-Reinickendorf, which included the former Olympic stadium, and

(2) The special training and redemption battalions for psychopaths, criminals and homosexuals.

2 August 1945

Leo Alexander, Major M.C.

APPENDIX 1

LIST OF REGULATIONS, MEMORANDA, CIRCULAR LETTERS AND REPORTS GOVERNING NEURO-PSYCHIATRIC PRACTICE IN THE GERMAN ARMY

1. Vorschrift über wehrmachtärztliche Untersuchungen im Kriege, ärztliche Anweisung zur Beurteilung der Kriegsbrauchbarkeit bei Kriegsmusterungen (V.U. Wm. Teil 4) vom 1.4.1944 HDv 252/4, MDv 248/4 LDv. 399/4

2. Richtlinien für die Beurteilung vom Soldaten mit seelisch-nervösen Abartigkeiten (Psychopathen) und seelisch-nervösen Reaktionen sowie für die Überweisung in Sonderabteilungen.

3. Sonder- oder Strafformationen. HDv 209 Richtlinien für die Beurteilung der Soldaten mit seelisch-nervösen Abartigkeiten.

4. Dienstunfähigkeit bei Schizophremie. Anordungen zum ärztlichen Dienst Nr. 1-4 Ziffer 19

5. Behandlung der Geisteskranken und Metaluiker. Anordnung zum ärztlichen Dienst Nr. 6. Ziffer 129

6. Merkblatt über zerebrale Krampfanfälle

7. 328. Verhalten gegenüber betrunkenen Soldaten. Heeres-Verordnungsblatt

8. 90. Alkohol- und Nikotinmissbrauch. Luftwaffen-Verordnungsblatt 5 Jahrgang Berlin, dem 3 April 1939 Nr. 16 Teil A.

9. Unterbringung von Alkohol- und Rauschgiftsüchtigen. Anordnungen zum ärztlichen Dienst Nr. 5 Ziffer 102

10. Gerichtspsychiatrische Gutachten. Der Heeres-Sanitätsinspekteur. 50 c 21 S. Jn/Wi G (1) 26/41 30 Mai 1941

11. Die Entwicklung des Homosexuellen-Problems in der Wehrmacht. GEHEIM

12. Auszug aus Vortragsvermerk für Herrn Feldmarschall, Chef WR 14 n 19 WR (11/7) Tgb. Nr. 753/42g 12 August 1941 GEHEIM

13. Vortragsvermerk für Herrn Generaloberstabsarzt Prof. Dr. Handloser 4 November 1942 GEHEIM

14. Zum Vortragsvermerk für Herrn Feldmarschall Chef W R 4 November 1942 GEHEIM

15. Richtlinien für die Behandlung von Strafsachen wegen widernatürlicher Unzucht (SS 175, 175a und 330a RStGB): Der Chef des Oberkommandos der Wehrmacht 14 n 19 WR (11) 58/43 g 19.5.43

16. Abdruck zur Kenntnis. Oberkommando des Heeres, Der Chef des Heeresjustizwesens, Ag Hr Wes (IV b/1) 653/43 g 8 Juni 1943 GEHEIM

17. Entlassung von Soldaten aus dem aktiven Wehrdienst wegen widernatürlicher Unzucht. AHM Vom 7.8.43 S. 390, Ziffer 623 GEHEIM

18. Entwurf. Gesetz über die Behandlung Gemeinschaftsfremder, Stand 4.7.1943 GEHEIM

19. Betr.: Begutachtung von Strafsachen wegen widernatürlicher Unzucht an den Beratenden Psychiater beim Heeres-San. Inspekteur. 15.12. 1944

20. Anordnungen zum ärztlichen Dienst Nr. 10. (Die Anordnungen zum ärztlichen Dienst sind in die H. Dv. 209/2 einzuheften) Der Heeres-Sanitätsinspekteur. Az B 49a 12 Beih. Wi G (1b) 6150/44. 30 September 1944.

21. Diagnostische Hinweise zum Ischiassyndrom.

22. An Wehrkreisärzte 1-X1, X111, XV111, XX, XX1 Leit. San. Offz. b. Wehrm. Bevollm. Prag. Res. Kriegslaz. Gruppe A und B Leit. San. Offz. b. Militärbefehlshaber Generalgouvernement. Der Heeres-Sanitätsinspekteur S In/Wi G (1) 2454/42. 27 April 1942. (Behandlung der Causalgie).

23. Behandlung rheumatischer Facialislähmungen. Anordnungen zum ärztlichen Dienst Nr. 6 Ziffer 121.

24. Nervenschussverletzungen. Anordnungen zum ärztlichen Dienst Nr. 6 Ziffer 123.

25. An Verteiler. Betr.: Überwachung von Verwundeten mit peripheren Lähmungen. Der Heeres-Sanitätsinspekteur. 50 c 21/S In/Wi G (1) 7143/41. 15 Dez 1941 Militärärztliche Akademie 23. 12. 1941. Akz. 50c.

26. Wehrkreisärzte: 1-X111 und XV11, XV111, XX, XX1. Aus der Praxis ärztlicher Gutachtertätigkeit. Oberkommando der Wehrmacht, 30 u. 50 S jn/WFV 5540/41 Bekanntgabe 65, 7 Juli 1941.

27. An die Beratenden Psychiater des Feld- und Ersatzheeres, Beratender psychiater beim Heeren-Sanitätsinspekteur. 24 Juli 1942.

28. Sammelbericht 2. Reihenfolge: Hirnschädigungen, Encephalitis, Polyneuritis unklare Lähmungen etc. Beratender Psychiater beim Heeres-Sanitätsinspekteur. Februar 1943.

29. Sammelbericht 3. Reihenfolge: Allgemeines Seite 1, Sulfomanide Seite 1, Hirnschädigungen Seite 1 etc. Beratender Psychiater beim Heeres-Sanitätsinspekteur. März 1943.

30. Sammelbericht 4. Reihenfolge: Allgemeines Seite 1, Neurologie Seite 1, Kausalgie Seite 1, etc. Beratender Psychiater beim Heeres San.-Inspekteur. Juli 1943.

31. Sammelbericht Nr. 5. Reihenfolge: Allgemeines Seite 1, Tauglichkeit Geisteskranker und WdB-Fragen etc. Beratender Psychiater beim Heeres-Sanitätsinspekteur, September 1943.

32. Sammelbericht Nr. 6. Reihenfolge: Vorbemerkung Seite 1, Wehrpflicht von Sterilisierten Seite 1, Forensisches Seite 1, etc. Beratender Psychiater beim Heeres-Sanitätsinspekteur, März 1944.

33. Sammelbericht Nr. 7. Vorbemerkung, Hirnschädigungen, etc. Beratender Psychiater beim Heeres-Sanitätsinspekteur. März 1944.

34. Sammelbericht Nr. 8. Psychosen, Symptomatische Psychose bei Typhus, Neuropsychische Störungen bei Wolhynischem Fieber. etc. Beratender Psychiater beim Heeres-Sanitätsinspekteur. Juni 1944.

35. Sammelbericht Nr. 9. Beratender Psychiater beim Heeres-Sanitätsinspekteur, August 1944.

36. Sammelbericht Nr. 10. Beratender Psychiater beim Heeres-Sanitätsinspekteur, Dezember 1944.

37. Bericht über die 3. Arbeitstagung Ost der Beratenden Fachärzte, vom 24. -26. Mai 1943 in der Militärärztlichen Akademie Berlin.

APPENDIX 2

QUOTED WRITINGS BY OBERSTARZT PROFESSOR DR. KURT SCHNEIDER.

1. Die Differentialdiagnose zwischen schizophrenen Geistesstörungen und Erlebnisreaktionen im Felde. Referat, 2. Arbeitstagung Ost, Fachgruppe Psychiatrie, Militärärztliche Akademie Berlin. 30. 11. 1942.

   Unpublished manuscript.

2. Die Neurosen vom Standpunkt der klinischen Psychiatrie. Referat, 4. Arbeitstagung der Beratenden Ärzte, Fachgruppe Psychiatrie, Lazarett Hohenlychen, 16 May 1944.

   Unpublished manuscript.

3. Die Psychopathischen Persönlichkeiten. 7th. Edition. F. Deuticke, Vienna, 1944. I-VII, 1-125

APPENDIX # 3

LIST OF WRITINGS FROM THE PSYCHIATRIC AND NEUROLOGICAL DEPARTMENTS OF THE UNIVERSITY OF HEIDELBERG MEDICAL SCHOOL

1. Schmieder, Friedrich.: Über Spätschäden des Fleckfiebers. Klinische Untersuchungen über nervöse Spätzustände nach Fleckfieber. Zugleich ein Beitrag zur Diagnostik und Pathogenese psychischer Defektsyndrome. Unpublished manuscript, 302 pages, with 44 illustrations, 61 graphs and 12 tables. Approved by the "Oberkommando der Wehrmacht" on 18 September 1944.

2. Bay, E. : Die heutigen Kenntnisse über Ätiologie und Therapie der multiplen Sklerose. Zeitschrift für ärztliche Fortbildung 41, 342-346, 1944

3. Bay, E.: Probleme der Hirnlokalisation. Der Nervenarzt: 16, 383-389, 1943.

4. Bay, E.: Die Fallhand nach Schussverletzungen des Armes als funktionelles Symptom. Der Deutsche Militärarzt 9, 435-437, 1944

5. Bay, E.: Zum Problem der taktilen Agnosie, Deutsche Zeitschrift für Nervenheilkunde 156, 64-96, 1944

6. Vogel, Paul.: Arzt und Kranker, Zentralblatt für Psychotherapie und ihre Grenzgebiete, 15, 137-139, 1941.

7. Vogel, Paul.: Die Versorgung der Nervenverletzten Soldaten. Zeitschrift für ärztliche Fortbildung. 38, 225-230, 1941

8. Vogel, Paul.: Neurologische Gesichtspunkte zur Beurteilung und Behandlung der Verletzungen peripherer Nerven. Deutsche Medizinische Wochenschrift, Nr. 30, 807, 1941

9. Vogel, Paul.: Über Verletzungen des axillaren Gefässnervenstranges. Der Nervenarzt: 14, 484-493, 1941

10. Vogel, Paul.: Beiträge zur Frage des vegetativen Systems und Stammhirns, Deutsche Medizinische Wochenschrift: Nr. 39/40, 548, 1944

APPENDIX 4

PUBLISHED AND UNPUBLISHED WRITINGS BY OBERSTARZT PROFESSOR DR. K. KLEIST AND COLLABORATORS

1. Kleist, Prof. Dr., Beratender Psychiater beim Wehrkreisarzt IX: Beobachtungen auf dem Neurologisch-psychiatrischen Fachgebiet im Jahre 1943(1-10).

2. Kleist,Prof. Dr.: Erfahrungsbericht über wichtige kriegsärztliche Beobachtungen für das Vierteljahr vom 1.10 -31. 12. 1944
Bezug: Wehrkreisarzt IX Ref. VII Az 21 a Ber. v. 14.3.44
Dem Wehrkreisarzt beim Wehrkreiskommando IX.
Kassel
Der Beratende Psychiater beim Wehrkreisarzt IX. Frankfurt a/M -Niederrad, 10.2. 1945 Universitatsnervenklinik. 1-14

3. Leonhard, K.:Die Angstpsychose in Wernickes und Kraepelins Betrachtungsweise. Zeitschrift für gesamte Neurologie und Psychiatrie 165, 75-78 1939.

4. Grosch, H.: Periodische und episodische Schlafzustände mit endokriner, besonders hypophysärer Dysfunktion. Allgemeine Zeitschrift für Psychiatrie und ihre Grenzgebiete 122, 115-162, 1945

5. Persch, R.: Beitrag zur Frage der epileptoiden Psychopathie. Allgemeine Zeitschrift für Psychiatrie und ihre Grenzgebiete 119, 229-238, 1942

6. Albert, E.: Über Leberinsuffizienz bei Psychosen aus dem manisch-depressiven Formenkreis und deren Günstige Beeinflussung mit Nicotinsäure. Inaugural-Dissertation zur Erlangung der Doktorwürde in der gesamten Medizin der Hohen Medizinischen Fakultät der Johann-Wolfgang-Goethe-Universität zu Frankfurt am Main. September 1944

7. Schwab, Hans.:Die paranoiden Schizophrenen auf Grund katamnestischer Untersuchungen III.Teil. Zeitschrift für die gesamte Neurologie und Psychiatrie. 173, 38-108, 1941

8. Neele, E. und Kleist, K.: Die paranoiden Schizophrenien auf Grund katamnestischer Untersuchungen. Zeitschrift für die gesamte Neurologie und Psychiatrie 175, 4-67, 1942

9. Meyer, G., Leonhard, K. und Kleist, K. Die paranoiden Schizophrenien auf Grund katamnestischer Untersuchungen. Zeitschrift für die gesamte Neurologie und Psychiatrie 177, 114-172, 1944

10. Kleist, K.: Die Katatomien. Der Nervenarzt, 16, 1-10, 1943

11. Lehmann-Facius, H.: Über Kolloid-Phänomene des Liquors bei endogenen Psychosen, mit Besonderer Berücksichtigung der Salzsäure-Kollargol-Reaktion. Zeitschrift für die gesamte Neurologie und Psychiatrie. 173, 472-494, 1941

12. Leonhard, K.: Die Mienen der ausdrucksarmen Gebiete des Gesichts. Psychiatrisch-Neurologische Wochenschrift. 45, 127-130, 1943

13. Leonhard, K.: Die Bedeutung optisch-räumlicher Vorstellungen für das elementare Rechnen. Zeitschrift für die gesamte Neurologie und Psychiatrie 164, 321-351, 1939

14. Duus, P, und Frank, H.R.: Über einen Fall von intermittierender Dyspraxie und Dysphonie. Deutsche Medizinische Wochenschrift Nr. 43, 1185, 1940

15. Pittrich. Alzheimer'sche Krankheit. Reichsanstalt für Film und Bild in Wissenschaft und Unterricht, Hochschulfilm C 387/1941

16. Pittrich. Mittelhirnsyndrom mit Greifreflex bei v. Winiwarter-Buerger'scher Krankheit. Reichsanstalt für Film und Bild in Wissenschaft und Unterricht, Hochschulfilm C 388/1941

17. Pittrich, H.: Stirnhirngeschwülste. Archiv für Psychiatrie und Nervenkrankheiten 113, 1-60, 1941

18. Speckmann Klaus.: Über zentrale Schmerzen und Hyperpathie bei Verletzungen des Grosshirns, insbesondere der Hirnrinde. Der Nervenarzt. 16, 208-220, 1943

19. Habel, Hans.: Symptomatische Psychose im Verlaufe der Hypophysen-Zwischenhirninsufficienz bei einem Fall von echter Nanosomia infantilis. Allgemeine Zeitschrift für Psychiatrie und ihre Grenzgebiete. 122, 285-337, 1943.

20. Pittrich, H.: Denkstörungen bei Hirnverletzten. Sammlung psychiatrischer und neurologischer Einzeldarstellungen, G. Thieme, Leipzig, 1944

APPENDIX 5

WRITINGS BY PROFESSOR DR. R. SIEBECK AND ONE BY AN ASSOCIATE

1. Siebeck, R.: Einleitung. Begriff und Stellung der Medizin, Der Arzt und seine Aufgabe, Der Kranke und seine Lage. Lehrbuch der Inneren Medizin, Berlin, Julius Springer, 1942., 1-46.

2. Siebeck, R.: Neurotische Reaktionen und Funktionelle Störungen des Vegetativen Systems. Lehrbuch der Inneren Medizin, Berlin., Julius Springer, 1942, 686-732.

3. Siebeck, R.: Vegetatives System und Stammhirn. Deutsche Medizinische Wochenschrift. Nr. 39/40, 543, 1944

4. Siebeck, R.: Die Bedeutung des vegetativen Systems für Diagnose und Therapie Unpublished manuscript. 1-9.

5. Siebeck, R.: Referat über Neurose. Beratende-Tagung der Sanitätsinspektion, 16 May, 1944, in Hohenlychen. Unpublished manuscript. 1-11.

6. Arnold, O.H.: Die Sogenannte Feldnephritis. Schriftenreihe zur Deutschen Medizinischen Wochenschrift, Leipzig, (G.Thieme) 1944. 1-154.

APPENDIX 6

PUBLICATIONS BY GENERALSTABARZT PROFESSOR DR. W. TÖNNIS AND COLLEAGUES

1. TÖNNIS,W.: Der Lufttransport von Verwundeten und Kranken als ärztliches Problem. Der Deutsche Militärarzt, 5: 5-7, 1940.

2. TÖNNIS,W.: Kreislaufstörungen nach Hirnoperationen. Archiv für Klinische Chirurgie, 200: 179-184, 1940.

3. TÖNNIS,W.: Anzeigestellung zur Myelographie. Der Chirurg, 12: 119-122, 1940.

4. TÖNNIS,W.: Operative Freilegung des Plexus lumbo-sacralis bei Schussverletzungen des Beckens. Zentralblatt für Chirurgie, 68: 1007-1011, 1941.

5. TÖNNIS,W.: Schussverletzungen des Gehirns. Berichte über die ärztlichen Tagungen der Luftflotte 2, Januar und März 1941, Heft 6, 3-14, 1941.

6. SNELLMAN,A.: Die Gehirn-, Rückenmarks- und Nervenverletzungen und der Sanitätsdienst der finnischen Armee während des Krieges 1939-1940 und nachher. Zentralblatt für Neurochirurgie, 6: 101-106, 1941.

7. BJÖRKESTEN,G. af : Über Nervenverletzungen im Finnisch-Russischen Kriege 1939-1940. Zentralblatt für Neurochirurgie, 6 : 107-113, 1941.

8. TÖNNIS,W.: Schussverletzungen des Gehirns. Zentralblatt für Neurochirurgie, 6 : 113-151, 1941.

9. ZÜLCH,K.J. Die Entstehung des Gehirndruckes,insbesondere des Prolapses bei Hirnwunde und ihren Folgezuständen. Zentralblatt für Neurochirurgie, 6 : 212-232, 1941.

10. FISCHER,E.: Gefässbedingte Schädigungen bei offenen Hirnverletzungen. Zentralblatt für Neurochirurgie, 6 : 232-274, 1941.

11. LEMKE,J.E.: Über Spätabzesse des Gehirns nach Kriegsverletzungen und ihre Behandlung durch Totalexstirpation. Zentralblatt für Neurochirurgie, 6 : 275-289, 1941.

12. TÖNNIS W..: Berichte über die ärztlichen Tagungen der Luftflotte 2, Januar und März 1941, Heft 9, 2-7, 1942.

13. TÖNNIS,W.: Die Behandlung der Schussverletzungen des Rückemarks. Berichte über die ärztlichen Tagungen der Luftflotte 2, Januar und März 1941, Heft 13, 3-6, 1942.

14. TÖNNIS,W.und GÖTZE,W.: Zur operativen Behandlung der Schussverletzungen der peripheren Nerven und ihre Erfolgsaussichten. Der Deutsche Militärarzt, 7 : 245-253, 1942.

15. TÖNNIS,W.: Richtlinien für die Behandlung der Schussverletzungen des Gehirns und die Beurteilung ihrer Folgezustände. München-Berlin (J.F. Lehmann), 1942,1-73

16. ZÜLCH,K.J.: Die Mitbewegungen bei Hirnverletzten. Zentralblatt für Neurochirurgie, 7 : 160-186, 1942

17. NOETZEL,H.: Über die pathologische Anatomie der traumatischen Meningitis bei Hirnschussverletzung. Archiv für Psychiatrie 115: 392-418, 1943.

18. TÖNNIS,W., Seifert,E. und RINCHERT,T.: Kopfverletzungen. Taschenbücher des Truppenarztes, Volume 2. München-Berlin (J.F.Lehmann) 1943, 1-215.

19. TÖNNIS,W.: Die Versorgung der Schussverletzungen des Gehirns (Januar 1945), (Appendix to No.18)

20. TÖNNIS,W.: Wann sollen die Schussverletzungen der peripheren Nerven operiert werden? Der Deutsche Militärarzt. 9 : 175-177, 1944.

21. TÖNNIS,W.: Die Behandlung der Schussverletzungen des Rückenmarks. Der Deutsche Militärarzt, 9 : 146-148, 1944.

22. DUSSIK, KARL THEO.: Über die Möglichkeit, hochfrequente mechanische Schwingungen als diagnostisches Hilfsmittel zu verwerten. Zeitschrift für die gesamte Neurologie und Psychiatrie, 174 : 153-168, 1942.


NATIONAL LIBRARY OF MEDICINE
Health, Education, and Welfare, Public Health Service
U.S. Department of Bethesda, Md.